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ANCIENT ROMIC CHRONOLOGY

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PREFACE.

IN 1916 I published in London, through Messrs. Sampson Low, Marston & Co., Ld., a little book entitled "The Secret of Egyptian Chronology."

Instead of "Egyptian," I now adopt the word "Romic," an adjective coined from Romiū, the name by which the original inhabitants of Khem called themselves.

On 2nd July, 1919, at the monthly Meeting of the Asiatic Society of Bengal, I had the honour of "reading" a paper on Ancient Romic Chronology, which was the outcome of further investigations that I had been making. It was "communicated" to the Society through the kindness of that very distinguished son of Bengal, Sir Asutosh Mookerjee, *Kt.*, without whose unfailing encouragement it is possible that my investigations would have languished, if not ceased.

In that paper I worked out my problem on the basis of the Year being one of 365 days, with further manipulations to bring my results—approximate only—into line with correct Solar or Natural Time.

Here I adopt the more direct course of working on the basis of a Year of 365¼ days. The outcome is in every way more satisfactory.

With the paper read to the Asiatic Society I submitted a few illustrations, showing how I apply my principles and methods to the data that so far have come to light.

In the following pages such illustrations are more numerous. Indeed, except for periods in respect of which

we possess no data whatever, I practically cover the entire field of ancient Romic history. I work out my case—a series of cases, in fact—under the very eye of the reader, who can himself test every submission that I make, either of fact or of inference, as the argument proceeds, except that, not being in possession of my Lists, he will probably be rather handicapped.

This present statement of my system, and of my results, supersedes, of course, everything not consistent therewith contained in "The Secret of Egyptian Chronology" or any other publication of mine.

BENGAL CLUB,
CALCUTTA:
25th July, 1919.

H. BRUCE HANNAH.

ANCIENT ROMIC CHRONOLOGY.

THE Natural or Solar Year has 365 days, 5 hours, 48 minutes, 48 seconds. That is, it has 365·242, or $365\frac{1}{4}$ days, all but 11 minutes, 12 seconds. This $365\frac{1}{4}$, taken as years and multiplied by 4, gives us 1461 Years : and on the exacter basis which I am now adopting we get 1461 Years, all but 11 days, 8 hours, 32 minutes, 0 seconds.

For purposes of calculation it is convenient to neglect the odd days, hours and minutes, and to proceed on the footing of a Year of $365\frac{1}{4}$ days, and a Cycle of 1461 Years.

The Year of $365\frac{1}{4}$ days I divide up spheroidally thus—

360	periods of	$1\frac{7}{480}$
90	,,	$4\frac{7}{480}$
12	,,	$30\frac{7}{16}$
3	,,	$121\frac{3}{4}$.

These divisions of the Year are also naturally divisions of the Cycle of 1461 Years, and of these latter we may speak under the following nomenclature and abbreviations :—

1. The Quadratures of the Cycle = $365\frac{1}{4}$ Years each, totalling 1461 Years. — Great Panegyrical Year, or 1st, 2nd, 3rd, and 4th G. P. Y.
2. Each 12th part of the Cycle = $121\frac{3}{4}$ Years = the basis of the Hunti Heb, or Festival. — Great Panegyrical Month, or G. P. M.
3. Each $\frac{1}{4}$th part of the G. P. M. = $30\frac{7}{16}$ Years = the basis of the Sed Heb. — Great Panegyrical Quarter-Month, or G. P. Q.-M.
4. Each 30th part of the G. P. M. = $4\frac{7}{120}$ Years. — Great Panegyrical Day, or G. P. D.
5. Each ultimate unitary division of the Cycle, or $\frac{1}{4}$th part of the G. P. D. = $1\frac{7}{480}$ Years. — Great Panegyrical Sub-Division, or G. P. S.

All these terms are, of course, quite arbitrary.

Next, I construct a Table or List of all possible Sed Hebs, or Festivals, of the G. P. Q.-M. periods of $30\frac{7}{16}$ Years, starting it from 0 (*Zero*)—which we may call Conventional B.C. 4004—and bringing it up to date, and even beyond. This will, of course, include all the Hunti Hebs of the G. P. M. periods of $121\frac{3}{4}$ Years, for they are merely quadruples of the Seds.

There is reason to believe that these Sed and Hunti Heb periods were connected with the revolutions of the Little Bear Constellation (Anūbis, Jackal, Cynosura) round the Pole, to which it is represented as attached by the "tail." Each quadrature may be regarded as corresponding to the quadrature of the Cycle : and thus, in some obscure way, this constellation was supposed to indicate, not only the time of the day and night in the course of every 24 hours, but the seasons of the year, and, doubtless, also the stage reached by the 1461-Years Cycle.

Egyptologists have long been puzzled by the notices regarding these Sed and Hunti Hebs. It has been suggested that Sed, or Set (which simply means 30, just as Hunti, or Henti, means 120), signified "Tail," and was a Festival held in honour of the coming of age of the Crown Prince, and his appointment as Heir to the Throne, he being fancifully spoken of as the "Tail" of the "Lion," or Pharaoh. Others, *e.g.*, Breasted, imagine that the Sed was a Festival personal to the reigning monarch, and usually celebrated by him after he had been reigning for 30 (some say 28) years. All these doubts and imaginings may now be definitely set aside. Of course, as meaning 30 or 120, Sed and Hunti were merely appellative, not descriptive, terms, really referring to the $30\frac{7}{16}$ and $121\frac{3}{4}$ Years periods—the fractions, because understood, being popularly disregarded. Indeed, for their ordinary, every-day affairs, the ancient Romiū had a Year or Spheroid of 360 days or degrees, with sub-divisions of 120, 30, and so forth.

A specially interesting effect of the above-mentioned division of $4\frac{7}{120}$ Years, or G. P. D., is this, that for every date in the ordinary Calendar the Annual Manifestation or Rising of the star Sōthis, or Sirius (the Dog-Star), occurs 4 times successively, the quartettes thus passing steadily through each ordinary month of the year in a period of $121\frac{3}{4}$ Years—the G. P. M.

If, then, we take our Calendar from 1 Thoth to 30 Mesorē, and start it at 0 (the Autumnal Equinox, or 22/23 September = the

4th day of the Natural Year), and carry it right round the circle or spheroid till we arrive again back at 0, we shall find that thereby *we have been writing down the dates of all the Annual Sōthic Risings since the beginning of Civilisation at intervals of* $4\frac{7}{120}$ *years, in sets of* 4 *for each date.*

We need no more than one such written-down List *for all Time*: because all we have to do, when trying to reduce a datum to True Time, is to make our calculations for any particular point on the spheroid, and then add 1, 2, or more Cycles of 1461 Years, according to the number of such Cycles that has already elapsed.

The so-called Official or Priestly Reports from which we obtain some of our data, are commonly referred to as Reports of the Rising of Sōthis. As a matter of fact, however, they are Reports of the Feasts held in celebration of the Risings. It is important to note that they are based on the plan of starting Progressive 1 Thoth (the Calendrical indicator) not from the Autumnal Equinox, or 0, but at a point (1 Epiphi $= 1218\frac{247}{480}$—$1221\frac{268}{480}$) 2 months earlier on the Spheroid, or Fixed Clock. This makes Official Time exactly 2 months ahead of Cyclical or True Time, which is only 4 days removed from Natural or Solar Time.

Nevertheless the Priests did not proceed on this footing. They went on the basis of 1 month 28 days ahead = the difference of 58 days lying between the opening and closing dates of the 2 months, Epiphi and Mesorē. The explanation, I imagine, is that, as already noted, what the Officials reported was really not the Risings, but the Feasts held in celebration of them.

Thus, for the Sōthic Feasts, we must calculate on the basis of Official Time being 1 month 28 days ahead of True Time. But for the Risings and all other purposes, we may take Official Time as having been exactly 2 months ahead of True Time, just as F. 1 Epiphi was exactly 2 months in advance of F. 1 Thoth.

Every Annual Sothic Rising happened, not at F. 1 Thoth, as some writers seem to state, but at the point known as F. 1 Epiphi on the Spheroid or Fixed Clock, *i.e.*, 10 months after the opening of the year at the Autumnal Equinox, or 0.

I have made a List, for one complete Cycle, showing all the Annual Risings that have occurred: and I have written it out in 2

columns—on the one side the Official Calendar, and on the other the Cyclical or True Calendar.

I have also made a List showing how the ordinary Egyptian Calendar equates with our own ordinary Calendar—starting it with the fact that our 22/23 September equated with their 0–1 Thoth, our 24 September with their 2 Thoth, and so on.

It would appear that in actual practice the ancient Romiū used a Year of 360 days (represented by 360 degrees on the spheroid), though well knowing that the Natural Year was longer; and harmonised the one year with the other in a fanciful, complicated way of their own, even in the person of Hōrus reaching the conception of the $\frac{1}{4}$ year, or little tongue that uttered the kosmical truth, but producing at one time a full artificial year of only 365 days.

Were we to use such a Year, instead of one of $365\frac{1}{4}$ days, we would have to divide up our spheroid differently, thus :—

360	periods of	$1\frac{1}{72}$
90	,,	$4\frac{1}{18}$
12	,,	$30\frac{5}{12}$
3	,,	$121\frac{3}{4}$.

This would give us a Cycle of 1460 Years, with quadratures of 365 years each, and minor divisions of $30\frac{5}{12}$ Years for the Seds, $121\frac{3}{4}$ for the Huntis, and $4\frac{1}{18}$ Years as the interval on the basis of which to construct our List of Annual Sōthic Risings in their several quartettes.

I did at first work out my calculations on this basis (*see* paper read at Meeting of Asiatic Society of Bengal on 2nd July, 1919): but to all my results an extra year had, of course, to be added for every preceding Cycle; for, at the end of every Cycle of 1460 Years only, a whole year is lost as compared with Natural Time. The necessity for this is obviated, and our results are more exact, by using a Cycle of 1461 Years straightaway. It is from the (to us) impossible Cycle of 1440 years, with its 360 degrees, or days, that we really get the 4 years' shift, and the round numbers 30 and 120, to which all our Egyptologists seem so wedded in thought.

Further, as the Romic Year of 365 days was shorter than Natural Time as recorded permanently on the Spheroid, or Fixed Clock, Progressive 1 Thoth, the indicator of the revolving or epicyclical Calendrical Clock, slowly travels round the Fixed Clock in its

progress along the Cycle. Thus, once and only once during every Cycle of 1461 Years, P. 1 Thoth reaches and equates with F. 1 Epiphi, or Spheroidal Points $1218\frac{247}{480}$—$1221\frac{268}{480}$. When it does this there takes place what is called a Real Hēliacal Rising of Sōthis.

Between this and the next similar Cyclical event there elapses a period of 1460 (1461) Years—corresponding to the length of the Cycle in which it occurs. This period is what Egyptologists have usually thought of as the Sōthic Cycle. In my opinion it was not the true Sōthic Cycle. The true Sōthic Cycle was the Cycle within which the above-mentioned Real Hēliacal Risings occurred as incidents. Possibly the other was what the Romiū used to call the Phœnix.

My List of Annual Sōthic Risings, beginning from A.M. 0 (*zero*), opens thus—

0–1 Thoth = 0–4 $\frac{7}{120}$
2 ,, = 8 $\frac{14}{120}$
3 ,, = 12 $\frac{21}{120}$

and so on. But the List is really made up in *quartettes*, or sets of 4 years—one quartette for each day of the month. Thus, the first entry, appearing as 4 $\frac{7}{120}$, must be taken to represent the fuller :—

0–1 Thoth A.M. 0–1 $\frac{7}{480}$
,, 2 $\frac{14}{480}$
,, 3 $\frac{21}{480}$
,, 4 $\frac{28}{480} = \frac{7}{120}$

So the second really represents—

2 Thoth A.M. 5 $\frac{35}{480}$
,, 6 $\frac{42}{480}$
,, 7 $\frac{49}{480}$
,, 8 $\frac{56}{480} = \frac{14}{120}$

and so on.

The following is a List of the Real Hēliacal Sōthic Risings that have occurred and will yet occur :—

A.M.		Conv. B.C.
$1218\frac{247}{480}$		$2785\frac{233}{480}$
$1219\frac{254}{480}$		$2784\frac{226}{480}$
$1220\frac{261}{480}$	=	$2783\frac{219}{480}$
$1221\frac{268}{480}$		$2782\frac{212}{480}$

A.M.		Conv. B.C.
$2679\frac{247}{480}$		$1325\frac{233}{480}$
$2680\frac{254}{480}$	=	$1324\frac{226}{480}$
$2681\frac{261}{480}$		$1323\frac{219}{480}$
$2682\frac{268}{480}$		$1322\frac{212}{480}$

A.M.			A.D.	
$4140\frac{247}{480}$	$141\frac{233}{480}$	(fr. 23 Sept.) –	$142\frac{240}{480}$	(to 22 Sept.)
$4141\frac{254}{480}$ =	$142\frac{240}{480}$	,, –	$143\frac{247}{480}$	,,
$4142\frac{261}{480}$	$143\frac{247}{480}$	,, –	$144\frac{254}{480}$	,,
$4143\frac{268}{480}$	$144\frac{254}{480}$	,, –	$145\frac{261}{480}$	,,
$5601\frac{247}{480}$	$1602\frac{233}{480}$	,, –	$1603\frac{240}{480}$	,,
$5602\frac{254}{480}$ =	$1603\frac{240}{480}$	,, –	$1604\frac{247}{480}$	,,
$5603\frac{261}{480}$	$1604\frac{247}{480}$	,, –	$1605\frac{254}{480}$	,,
$5604\frac{268}{480}$	$1605\frac{254}{480}$	,, –	$1606\frac{261}{480}$	,,
$7062\frac{247}{480}$	$3063\frac{233}{480}$	,, –	$3064\frac{240}{480}$	,,
$7063\frac{254}{480}$ =	$3064\frac{240}{480}$	,, –	$3065\frac{247}{480}$	,,
$7064\frac{261}{480}$	$3065\frac{247}{480}$	,, –	$3066\frac{254}{480}$	,,
$7065\frac{268}{480}$	$3066\frac{254}{480}$	,, –	$3067\frac{261}{480}$	,,

(And so on, at intervals of 1461 Years.)

Most Egyptologists are wont to speak of the second of the above series of quartettes (A.M. $2679\frac{247}{480}$—$2682\frac{268}{480}$) as having been what is called the Era of Menophrēs. This I regard as erroneous. The traceable beginnings of Romic Civilisation are centred round Thinis near Abydos, under the rule of Mēnēs and his descendants. He appears to have instituted Chronology by decreeing that Time should be taken as starting from the arbitrary spheroidal point **0** (*Zero*) with a Cycle of 1460 Years, based on a Year of 365 days. On this footing his own regnal period appears to have commenced from A.M. 1095 (Summer Solstice) = according to our conventional chronology, Conv. B.C. 2909. Thus his first regnal year was Conv. B.C. $2907\frac{1}{2}$, if the Year be taken at 365 days. If it be taken, as I now take it, at $365\frac{1}{4}$ days, his reign began from A.M. $1095\frac{3}{4}$, his first regnal year having been A.M. $1096\frac{367}{480}$ = Conv. B.C. $2907\frac{113}{480}$.

The seat of government, then and in the days of the 3rd, 4th, 5th, and 6th Dynasties—this last flourishing during Conv. B.C. $2309\frac{338}{480}$—$2121\frac{112}{480}$—was at the "White Wall." In the days of Pepi I of the 6th Dynasty (A.M. $1728\frac{115}{480}$—$1749\frac{115}{480}$), the

name of Pepi's pyramid, "Men-Nofer," *i.e.*, "Good or Perfect Mansion," became, according to Breasted, the recognised name of the city, being afterwards corrupted by the Greeks to Memphis; and "White Wall" survived only as an archaic and poetical designation (*Hist. of Eg.*, pp. 132–3). It may be doubted whether this was the derivation of "Memphis."

Meanwhile the first quartette of the Real Hēliacal Sōthic Risings had been taking place in A.M. $1218\frac{247}{480}$—$1221\frac{268}{480}$. Probably, therefore, in and from the days of Pepi I, this epoch became recognised as the commencement of the Era of Menophrēs, which is obviously but a later Hellenised form of Men-Nofer. The quartette of Risings, usually called the Era of Menophrēs by Egyptologists and generally associated with R. S. Poole's "B.C. 1322," was thus merely the first recurrence of that first quartette.

The foregoing List of Real Hēliacal Sōthic Risings is on the basis of the Rising always taking place at spheroidal point F. 1 Epiphi, whether in the case of these Cyclical events or in the case of the ordinary Annual Risings. This, however, it does not in fact do. Indeed, according to Lt.-Col. Conder (*The Hittites*, p. 180), the Rising now occurs about $2\frac{1}{2}$ minutes *later*, each succeeding year, which means a shift of say $2\frac{103}{192}$ days every Cycle of 1461 Years: but he adds that about 2,900 years ago the rate of retardation was nearly five times as great. The same movement must, of course, affect the position on the spheroid of the Summer Solstice, and is doubtless caused by the Precession of the Equinoxes. If so, like the Equinox and the Solstice, the Rising would remain in one arc of the spheroid corresponding to the G. P. M. for a period of exactly $2155\frac{2}{3}$ years, after which it would pass on to the next month, thus completing the entire round of the spheroidal circle in 25,868 years. For present purposes, however, we may neglect this slow side-step or shift. To take it into account here would enormously and needlessly complicate and embarrass our calculations.

Sometimes Seds and Huntis are referred to in the Official Reports, on the Monuments, or in the Papyri. When this is so, we *may* haply find, by simply looking up my Heb List above-mentioned, that Heb-Dates and Rising-Dates or rather Feast-Dates, precisely tally—the former occasionally even falling in, to a hair, with the latter, and thus operating as Clinch-Dates, or a Chronological

Control. There cannot, of course, be a Heb-Date for every Rising, seeing that the latter are annual occurrences, but for every Heb-Date there will be found a Rising-Date. Only very rarely, however, is this coincidence *noticed* in the data that we possess. Such a notice, when we get it, is invaluable. The reign of Thothmēs III is fortunately distinguished by two of them.

I invite attention to the fact that, by discovering the constant relation subsisting between the Officially Reported Data and the Spheroidal Divisions of the Cycle as starting from the Autumnal Equinox at 0, and from nowhere else, an exact and certain Chronology—provided, of course, that our arithmetic is sound—is now for the first time made available. The bearings of this upon future research are obvious. So are its probable revolutionary effects upon such archæological knowledge as we think we now possess. The magnitude of its possible effects in the way of opening up further realms of discovery, I must leave to the imagination of the reader.

I now proceed to make a practical application of my principles and methods to the elucidation of ancient Romic History—in the guise in which it has come down to us through the records that we possess.

If and when we acquire more data, we shall be in a position to make further progress.

Our first step is to ascertain the correct dates of the Risings so far as they have become known to us through the so-called Official or Priestly Reports, which, however, are really Reports of Feasts, not of Risings.

The List—mostly supplied by Professor W. M. Flinders Petrie—is as follows:—

1. "15th day of the 8th month," in the 7th regnal year of Senwosri III of the 12th Dynasty, and in the 120th year of that Dynasty. *See* the *Kahūn Papyrus*. Also *Encyc. Brit.*, 11th ed.
2. 9 Epiphi, in the 9th regnal year of Amenhotep I of the 18th Dynasty.
3. 14 Epiphi, in the reign of Thothmēs I of the 18th Dynasty—regnal year not given.
4. 21 Epiphi, in the 16th regnal year of Queen Hatshepsūt of the 18th Dynasty = the 3rd regnal year of Thothmēs III.

5. 28 Epiphi, in the 33rd regnal year of Thothmēs III.
6. 7 Mesorē, in the reign of Amenhotep II—regnal year not given.
7. 14 Mesorē in the reign of Amenhotep II—regnal year not given.
8. 21 Mesorē—no more data.
9. 28 Mesorē, in the reign of Tût-Ankh-Amen of the 18th Dynasty —regnal year not given.
10. 7 Thoth—no more data.
11. 14 Thoth—no more data.
12. (?) in the 5th regnal year of Rāmēsēs II. A Sed.
(?) in the 33rd regnal year of Rāmēsēs II. A Sed.
22 Thoth, in the 41st regnal year of Rāmēsēs II.
(?) in the 64th regnal year of Rāmēsēs II. A Hunti.
13. 29 Thoth, in the 2nd regnal year of Meren-Ptāh.
14. 1 Thoth, in the reign of Rāmēsēs III of the 20th Dynasty. (*See* Poole's *Horæ Ægyptiacæ*, p. 31.)
15. 1 Tybi, in the 11th regnal year of Thakelath II of the 22nd Dynasty. (*See* Conder's *Hittites*, p. 179.)

Now let us see whether we can put these data on our Cycle of 1461 Years.

We may look upon the possible kinds of Time as 4 :—

1. Real Natural or Solar Time, based on the commencement of the Natural Year at 19/20 September, thus making the Autumnal Equinox at 0, the 4th day of the Natural Year = our 23 September.

2. What I am calling Cyclical or True Time, as indicated by the Fixed Clock, with its Year starting from the Autumnal Equinox, or 0, *i.e.*, from the 4th day of the Natural Year.

3. Progressive Time, as indicated by Progressive New Year's Day, *i.e.*, P. 1 Thoth, as it shifted or revolved slowly round the spheroidal divisions of the Fixed Clock throughout the Cycle of 1461 Years.

4. Official or Priestly Time—a revolving indication, like Progressive Time, but starting with F. 1 Epiphi, *i.e.*, Spheroidal Point $1095\frac{3}{4}$, instead of with F. 1 Thoth, *i.e.*, from 0, or *Zero*.

We must remember that, in connection with the data regarding Feasts held in celebration of Sōthic Risings, Official Time was always 1 month 28 days ahead of Cyclical or True Time : but for all other purposes it was 2 months ahead.

Note also that Progressive Time was always the same remove *backwards* from F. 1 Epiphi as True Time was *forwards* from the Autumnal Equinox at 0.

After Real Hēliacal Sōthic Rising 1 Epiphi A.M. $1221\frac{268}{480}$, ordinary Annual Risings occurred regularly as follows—

$1221\frac{268}{480}$

2 Epiphi–1 Mesorē .. .. $\left\{\begin{array}{r} 121\frac{360}{480} \\ 1343\frac{148}{480} \end{array}\right.$

2 Mesorē–1 Thoth .. .. $\left\{\begin{array}{r} 121\frac{360}{480} \\ 1465\frac{28}{480} \end{array}\right.$

2 Thoth–1 Paophi .. .. $\left\{\begin{array}{r} 121\frac{360}{480} \\ 1586\frac{388}{480} \end{array}\right.$

2 Paophi–1 Athyr .. .. $\left\{\begin{array}{r} 121\frac{360}{480} \\ 1708\frac{268}{480} \end{array}\right.$

2–16 Athyr .. .. .. $\left\{\begin{array}{r} 60\frac{420}{480} \\ 1769\frac{208}{480} \end{array}\right.$

17 Athyr .. .. .. $\left\{\begin{array}{r} 4\frac{28}{480} \\ 1773\frac{236}{480} \end{array}\right.$

This last quartette may also be set down in detail thus—

17 Athyr .. .. .. $\left\{\begin{array}{l} 1770\frac{215}{480} \\ 1771\frac{222}{480} \\ 1772\frac{229}{480} \\ 1773\frac{236}{480} \end{array}\right.$

If, now, we subtract 1461 from these for the 1st Cycle, we get, as falling in the 2nd Cycle, the following quartette :—

$309\frac{215}{480}$
$310\frac{222}{480}$
$311\frac{229}{480}$
$312\frac{236}{480}$

And, on reference to our List of all Risings since A.M. 0, we find that these are exactly the figures in the standard Cycle for the date F. 17 Athyr. Therefore the 4 years A.M. $1770\frac{215}{480}$—$1773\frac{236}{480}$ are the Cyclical or True Time for the Rising that occurred in the course of the 2nd Cycle on 17 Athyr by the Fixed or Spheroidal Clock. Official Time for it (2 clear months ahead) must have been F. 17 Tybi. What, then, was the corresponding Progressive Time ? F. 17 Athyr, True Time, was 2 months 17 days forwards from the

Autumnal Equinox at 0. Therefore Progressive Time must have been 2 months 17 days backwards from F. 1 Epiphi. This indicates 14 Pharmūthi = what I would call the 14th day of the 8th month from *Zero*.

Now, in his Report of the Sōthic Feast held in celebration of this Rising, which occurred in the 7th regnal year of Senwosri III of the 12th Dynasty, and in the 120th year of that Dynasty, the Priest referred to in the *Kahūn Papyrus* speaks of "the 15th day of the 8th month." What exactly did he mean by that? He was not speaking of Cyclical or True Time. Nor was he speaking of his own Official Time; for, according to that (1 month 28 days ahead of True Time), the date was 15 Tybi. Yet for the Priesthood not Tybi but Mekhir was the "8th month," *i.e.*, counting from F. 0–1 Epiphi. The Priest must, therefore, have been speaking in terms of Progressive Time, understood as I am explaining it here. This as regards the month. But, as regards the day of the month, he seems to have been obsessed with the idea of "the 15th," as in 15th Tybi, his substitute for 17th Athyr, True Time. Really he should have calculated thus—2 months 15 days back from F. 1 Epiphi = 16 Pharmūthi. He did not do this. He had "the 15th" in his thoughts, and to get it he allowed 2 months 16 days back. There may be some other explanation, but this is how the matter strikes me.

Now, the True Time for this datum works out at F. 17 Athyr. I look this up in my List of Annual Risings, and I find that it means spheroidally Point $312\frac{59}{120} = 312\frac{236}{480}$. Well, we know that in this case we are dealing with some time in the 2nd Cycle. Therefore, to this $312\frac{236}{480}$ I add 1461. This gives me A.M. $1773\frac{236}{480}$. I accordingly see that I have obtained as a result the following quartette of years:—

A.M.
$1770\frac{215}{480}$
$+ \quad 1\frac{7}{480}$
$1771\frac{222}{480}$
$+ \quad 1\frac{7}{480}$
$1772\frac{229}{480}$
$+ \quad 1\frac{7}{480}$
$1773\frac{236}{480}$

The year we want (the year fulfilling all the conditions mentioned in our data of knowledge in this case) must, therefore, be one in this quartette of years. As a matter of fact, it is A.M. $1771\frac{222}{480}$. But how that is arrived at, is a little extension of the problem which introduces Senwosri I aforesaid and matters recorded about him.

This enables us to make the following re-construction of the 12th Dynasty, with regard to whose period Professor Breasted and other leading Egyptologists have hitherto been content to nestle confidingly in the bosom of Teutonic authority—

The 12th Dynasty.

Amenemhat I (Sehetep-ab-Rā)	18 yrs.	..	A.M. $1650\frac{349}{480}$–$1667\frac{468}{480}$
Senwosri I	45 ,,	..	,, $1667\frac{468}{480}$–$1712\frac{396}{480}$

(In his 3rd regnal year, A.M. $1670\frac{2}{480}$, Senwosri I decided to build a Temple to the Sungod at On, or Hēliopolis).

Amenemhat II	35 yrs.	..	A.M. $1712\frac{396}{480}$–$1747\frac{54}{480}$
Senwosri II	19 ,,	..	,, $1747\frac{54}{480}$–$1765\frac{180}{480}$
Senwosri III	38 ,,	..	,, $1765\frac{180}{480}$–$1802\frac{432}{480}$

(Reported Sōthic-Rising Feast in A.M. $1771\frac{222}{480}$ = Conv. B.C. 2232 $\frac{258}{480}$, in his 7th regnal year, and 120th year of the Dynasty. Date, "15th day of the 8th month" = F. 17 Athyr, True or Spheroidal Time.)

Amenemhat III	48 yrs.	..	A.M. $1802\frac{432}{480}$—$1850\frac{288}{480}$
Amenemhat IV	9 ,,	..	,, $1850\frac{288}{480}$—$1858\frac{344}{480}$
Sebeknefrūrē	4 ,,	..	,, $1858\frac{344}{480}$—$1861\frac{365}{480}$

Period: A.M. $1650\frac{349}{480}$—$1861\frac{365}{480}$ = Conv. B.C. $2353\frac{131}{480}$ —$2142\frac{115}{480}$ = $211\frac{16}{480}$ spheroidal years.

Note.—By the above figures the required result works out exactly, namely, that Senwosri III's 7th regnal year (A.M. $1771\frac{222}{480}$) was the 120th year of the Dynasty. Also it consists with the information we get from the Obelisk regarding the completion of Senwosri I's "foundation-work" (begun in his 3rd year) at the time of the Sed Heb for A.M. $1674\frac{1}{16}$. Add 119 to A.M. $1650\frac{349}{480}$, and it makes A.M. $1771\frac{222}{480}$: not, it is true, by ordinary years, but on the basis of our years being spheroidal years of $1\frac{7}{480}$

each. Hence, this 119 must be taken as 119 times $1\frac{1}{480} = 120-\frac{353}{480}$. Thus—

A.M. $1650\frac{349}{480}$
$+$,, $120\frac{353}{480}$
,, $1771\frac{242}{480}$

Breasted assigns Amenemhat 30 years. But, on the grounds above referred to, connected with the Senwosri I records, I submit that we cannot now allow him more than 18 years, at least as associated with this 12th Dynasty.

No other date hitherto assigned by any Egyptologist for this Senwosri III Rising satisfies all the above imperious conditions as my figures do—or indeed at all.

Moreover, in A.M. Before *Zero* 553, or, as we may say, Conv. B.C. 4557, the Sun, theretofore in Constellation Gemini, entered Constellation Taurus (Meṣ-Rā, or *Abir* = the Young Bull), and it remained therein, and the Cult of Meṣ-Rā accordingly came into vogue, till Conv. B.C. $2401\frac{1}{3}$ = A.M. $1602\frac{2}{3}$, when it entered Const. Aries (Ammon, Amon, or Amen = the Ram): and thereupon the right to divine honours, as the supreme Solar Deity throughout Tomeri, or Khem, passed from Meṣ-Rā, the Bull, to Ammon-Rā, the Ram. This was over a generation ($48\frac{229}{480}$ years) before the accession of Sehetep-Ab-Rā as Amenemhat I, founder of the 12th Dynasty. Indeed, it was thus, *i.e.*, *by his change of name* on his accession, that under him and the auspices of the new Dynasty, Ammon-Rā was first *officially* recognised. It is noteworthy, however, that there had already been an individual named Amenemhat (Vizier of Mentû-Hotep III of the 11th Dynasty) some 54 years before the accession of Amenemhat I in A.M. $1650\frac{349}{480}$.

Breasted's German date for the Senwosri III Rising—namely, *cir.* Conv. B.C. 1880, based on the calculations of K. Sethe and Eduard Meyer—may now be definitely discarded.

Before leaving the age of the 12th Dynasty, I have some further remarks to make. In *Horæ Ægyptiacæ*, pp. 20–25, R. S. Poole speaks of a Tropical Cycle of 1,500 Years known to the ancient Egyptians (Romiû?) and beginning at F. 1 Khoiak, the day after the Winter Solstice. He adduces evidence to show that in Conv. B.C. 2005 the New Moon of April fell on the 8th (civil) of that

month, and the Vernal Equinox on the 7th. That same year, he says, the commencement of the First Tropical Year and the 1st day of the Vague (or Progressive) Year coincided on 7th January. Also, he says, in Conv. B.C. 506 the New Moon of March fell on the 28th of that month, and the Vernal Equinox on the 27th. Next year, therefore, in B.C. 507, there was another Coincidence of the Tropical with the Vague Year. This, he adds, was when Egypt was a province of the Persian Empire under Darius Hystaspēs. Interval between the Coincidences, 1,500 Years.

These statements seem all right. But Poole goes on to say that the First Coincidence happened some time during the reign of Amenemha (Amenemhat) II of the 12th Dynasty, whose period, he says, was somewhere between Conv. B.C. 1950 and Conv. B.C. 2050. Also he tells us that Champollion and Rosellini had mistakenly placed the Sesertesens (Senwosris) and Amenemhas (Amenemhats) in the 16th and 17th Dynasties.

Now, Amenemhat II's regnal period was really A.M. $1712\frac{296}{480}$ —$1747\frac{54}{480}$ = Conv. B.C. $2291\frac{184}{480}$—$2256\frac{426}{480}$. And Conv. B.C. 2005 (= A.M. 1999) was not in Amenemhat II's time at all! It was some time early in the little known period of the Hyksōs Domination. The reference, therefore, is either to some Hyksōs ruler's time, or to the time of one of the numerous Romic Dynasts who were vassals to the Hyksōs, and were continually at war with them and with the then sprouting House of Thebes and their faithful allies of El Kab. Hence, Champollion and Rosellini were only wrong in that—according to Poole—they thought that the "Sesertesens and Amenemhas" flourished in the days of these Hyksōs Overlords and vassal Romic dynasts. The idea that that (and not the true period of the 12th Dynasty) was the epoch in which the abovementioned Coincidence between the Tropical and Vague Years occurred, is a correct idea : and Poole's assertions or submissions are wholly baseless.

If we carry the alleged Coincidence back one Cycle higher than the date associating it with the age of the early Hyksōs, we get A.M. 499 = Conv. B.C. 3505, which was centuries before the days of the 12th Dynasty as fixed in this paper.

We are now set immovably on the Cycle of 1461 Years which started *ex hypothesi* from 0 (*Zero*).

Continuing with our List of Annual Sōthic Risings, we get the following :—

Our last date was— A.M. $1773\frac{336}{480}$

18–30 Athyr .. .. .. $\begin{cases} 52\frac{364}{480} \\ 1826\frac{120}{480} \end{cases}$

1–30 Khoiak
1–30 Tybi
1–30 Mekhir
1–30 Phamenoth
1–30 Pharmūthi } .. .. $\begin{cases} 608\frac{360}{480} \\ 2467\frac{224}{480} \end{cases}$

9 Pakhons .. .. .. $\begin{cases} 4\frac{28}{480} \\ 2471\frac{252}{480} \end{cases}$

Or the last quartette may be set down in detail thus—

A.M.
$2468\frac{231}{480}$
$2469\frac{238}{480}$
$2470\frac{245}{480}$
$2471\frac{252}{480}$

Then comes—

A.M.

10 Pakhons .. .. $\begin{cases} 2472\frac{259}{480} \\ 2473\frac{266}{480} \\ 2474\frac{273}{480} \\ 2475\frac{280}{480} \end{cases}$

Here we halt : for according to Official Report a Feast was held in celebration of a Sōthic Rising in the 9th regnal year of Amenhotep I of the 18th Dynasty. The date given is 9 Epiphi, Official Time. 2 months behind that = 9 Pakhons, True Time, which was probably the date of the Rising. But, as regards the Feast, 1 month 29 days (going by the Senwosri III Feast day) gives us 10 Pakhons = a quartette of years ending A.M. $2475\frac{280}{480}$. 1 month 28 days behind (which I prefer and adopt) gives us 11 Pakhons, True Time = the following quartette of years—

A.M.		Conv. B.C.
$2476\frac{267}{480}$		$1527\frac{193}{480}$
$2477\frac{294}{480}$		$1526\frac{186}{480}$
$2478\frac{301}{480}$	=	$1525\frac{179}{480}$
$2479\frac{308}{480}$		$1524\frac{172}{480}$

It was therefore in one of these 4 years that the Feast under notice was held. And that one would have been Amenhotep I's 9th regnal year. Which of them is it most likely to have been ?

We possess 2 Clinch-Dates in Thothmēs III's reign, on the basis of which we can try to reckon back: but our conclusion can only be approximate, as we do not know precisely how many years Amenhotep I, Thothmēs I, and Thothmēs II reigned. I work it out that they reigned 21, 21, and 16 years, respectively. That means that Amenhotep I acceded, say, in A.M. 2469 = Conv. B.C. 1535: whence it follows that his 9th regnal year was A.M. 2477, *i.e.*, the first year of the quartette of years set out above.

Whence, again, it follows that the regnal period of Aahmēs I, the Founder of the Dynasty, was about A.M. 2445–2469 = Conv. B.C. 1559–1535.

The next reported Sōthic Feast was one said to have been held on 14 Epiphi, Official Time, in the reign of Thothmēs I, 18th Dynasty —regnal year not stated. As regards True Time, 2 months behind this = 14 Pakhons. This we may put aside. 1 month 29 days behind = 15 Pakhons, indicating the quartette of years—

A.M.

$2492\frac{329}{480}$
$2493\frac{406}{480}$
$2494\frac{413}{480}$
$2495\frac{420}{480}$

in which case the Feast was held in Thothmēs I's 5th, 6th, 7th, or 8th regnal year: for he acceded about A.M. 2489. 1 month 28 days behind = 16 Pakhons, indicating the quartette—

A.M.

$2496\frac{427}{480}$
$2497\frac{434}{480}$
$2498\frac{441}{480}$
$2499\frac{448}{480}$

in which case the Feast was held in his 9th, 10th, 11th, or 12th year. This I adopt. How does it appear on the Cycle as we are writing it down? Our last item was—

A.M.

10 Pakhons .. .. $2475\frac{280}{480}$

11–15 „ .. .. $\left\{\begin{array}{r} 20\frac{140}{480} \\ 2495\frac{420}{480} \end{array}\right.$

16 „ .. .. $\left\{\begin{array}{r} 4\frac{28}{480} \\ 2499\frac{448}{480} \end{array}\right.$

It works out exactly. For 16 Pakhons, True Time, the corresponding Progressive Time was 15 Paophi.

The next reported Sōthic Feast is one said to have been held on 21 Epiphi, Official Time, in the 16th regnal year of Queen Hatshepsūt of the 18th Dynasty, which, we shall find, corresponded with the 3rd regnal year of Thothmēs III of the same Dynasty.

This will be a test case of my principles and method.

From the inscriptions we learn that in this same year a Sed Heb (or Sed-Period of $30\frac{7}{16}$ years) was celebrated by Hatshepsūt and Thothmēs III *jointly* on 30 Mesorē, and a commemorative Obelisk was erected at Karnak. Hence, the year-date of this Festival and that of the Sōthic Feast or Rising *ought* to be identical. Are they identical? Referring to our Heb List, we find that there was a Sed Heb for A.M. $2526\frac{5}{16}$. Was this the year-date of the Sōthic Feast now under notice?

2 months behind 21 Epiphi, Official = 21 Pakhons, True, which gives us the quartette of years—

A.M.
$2517\frac{87}{480}$
$2518\frac{94}{480}$
$2519\frac{101}{480}$
$2520\frac{108}{480}$

This we may at once set aside. So 1 month 29 days behind = 22 Pakhons, True, which gives us the quartette of years—

A.M.
$2521\frac{115}{480}$
$2522\frac{122}{480}$
$2523\frac{129}{480}$
$2524\frac{136}{480}$

This is also plainly unsuitable, and, moreover, clearly shows us that the "1 month 29 days ahead" method is erroneous.

On the other hand, 1 month 28 days (our old way) = 23 Pakhons, True Time, and gives us the quartette of years—

A.M.
$2525\frac{143}{480}$
$2526\frac{150}{480}$
$2527\frac{157}{480}$
$2528\frac{164}{480}$

Here, at last, in A.M. $2526\frac{150}{480}$, we find the year corresponding to the year in the Heb List, A.M. $2526\frac{5}{16}$: for $\frac{5}{16}$ is just the same as $\frac{150}{480}$. We are thus confirmed in our original conviction that, so far at least as their Sōthic Feasts were concerned, the Priests for the purposes of their Official Time took that Time as being 1 month 28 days ahead of True Time.

For 23 Pakhons, True Time, the corresponding Progressive Time was 8 Paophi.

On the Cycle, as written steadily down, we arrive at the same result in due course. Our last item was—

			A.M.
16	Pakhons	..	$2499\frac{448}{480}$
17–22	,,	..	$24\frac{168}{480}$ / $2524\frac{136}{480}$
23	,,	..	$4\frac{28}{480}$ / $2528\frac{164}{480}$

Here, I submit, we have a Clinch-Date. On this alone, by dead-reckoning, we might build up very satisfactorily a considerable portion of ancient Chronology.

But we are equally fortunate in our data for the next Sōthic Feast, which is reported as having been held on 28 Epiphi, Official Time, in the 33rd regnal year of Thothmēs III. This is another test case.

From the inscriptions we learn that in this same year, on 30 Mesorē, Thothmēs III celebrated a Hunti Heb, or Quadruple Festival, *i.e.*, a Heb of the kind that was celebrated every $121\frac{3}{4}$ Years, corresponding to the G. P. M. of the Cycle, and probably an entire round of the Little Bear (Cynosura). Hence, the year-date of this unusual kind of Heb and that of the Sōthic Feast now under notice ought again to be identical. Of course, also, it is easy to see that if our last case was soundly argued, and Thothmēs III's 16th regnal year was A.M. $2526\frac{150}{480}$, his 33rd must be A.M. $2556\frac{360}{480}$.

Looking at our Heb List, we find that one—a true Hunti Heb as the occasion requires—fell as completed in A.M. $2556\frac{2}{16}$. Was this also, in fact, the year-date of the Sōthic Feast?

1 month 28 days behind 28 Epiphi, Official Time = 30 Pakhons, True Time. If, now, we refer to our List of Rising-Dates, we shall

find that 30 Pakhons $= 1095\frac{90}{120}$ on the spheroid. This + 1461 for the previous Cycle, gives us A.M. $2556\frac{90}{120}$, which is, of course, exactly identical with A.M. $2556\frac{12}{18}$, the year-date of the Hunti Heb standing in its place in the Heb List. Thothmēs III's 33rd regnal year, therefore, was clearly what it ought to have been, *i.e.*, A.M. $2556\frac{360}{480}$, and no other.

For 30 Pakhons, True Time, the corresponding Progressive Time was 1 Paophi.

Again, we reach this same A.M. $2556\frac{360}{480}$ in due course by quietly proceeding on our way round the Cycle. Our last item was—

		A.M.
23 Pakhons	.. ..	$2528\frac{164}{480}$
24–30 „	.. ..	$28\frac{196}{480}$
		$2556\frac{360}{480}$

Or thus—

		A.M.
		$2528\frac{164}{480}$
24–29 Pakhons	.. ..	$24\frac{168}{480}$
		$2552\frac{332}{480}$
30 „	.. ..	$4\frac{28}{480}$
		$2556\frac{360}{480}$

Or thus in more detail—

		A.M.
		$2553\frac{339}{480}$
		$2554\frac{346}{480}$
30 Pakhons	.. ..	$2555\frac{353}{480}$
		$2556\frac{360}{480}$

This is my second Clinch-Date and Chronological Control. Round this and A.M. $2526\frac{150}{480}$ we may build up our adjustments with perfect confidence, and also gaze eagerly into that future which, we trust, will in all good time present us with further data.

The next reported Sōthic Feast is one said to have been held on 7 Mesorē, Official Time, in the reign of Amenhotep II of the 18th Dynasty. But in what regnal year? That is not stated. Nevertheless we can obtain it—at least within a choice-limit of 4

years. We cannot this time get the exact year, because no kindly datum exists on the monuments, nor is there any notice of any kind referring to any Sed or Hunti Heb, which might have operated as an indicator or control.

1 month 28 days behind 7 Mesorē, Official = 9 Paoni, True Time. That, spheroidally, is $1132\frac{333}{120}$ in our List of Annual Rising-Dates. Adding 1461 for the previous Cycle, we get the quartette of years—

	A.M.
	$2590\frac{111}{480}$
	$2591\frac{118}{480}$
	$2592\frac{125}{480}$
	$2593\frac{132}{480}$

The Feast, therefore, was held in Amenhotep II's 13th, 14th, 15th or 16th regnal year.

Now let us trace this on the Cycle. Our last item was—

			A.M.
30	Pakhons		$2556\frac{360}{480}$
1–8	Paoni	$32\frac{224}{480}$	
		$2589\frac{104}{480}$	
9	,, ...	$4\frac{28}{480}$	
		$2593\frac{132}{480}$	

Or thus in detail—

		A.M.
		$2590\frac{111}{480}$
		$2591\frac{118}{480}$
9	Paoni	$2592\frac{125}{480}$
		$2593\frac{132}{480}$

For 9 Paoni, True Time, the corresponding Progressive Time was 22 Thoth.

The next reported Sōthic Feast is one said to have been held on 14 Mesorē, Official Time, also in Amenhotep II's reign. Here too the regnal year is not stated. But we work it out on the same lines as those followed in the immediately preceding case.

1 month 28 days behind 14 Mesorē, Official = 16 Paoni, True Time. In the Annual Rising-Dates List that appears spheroidally as

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$1160\frac{82}{120}$. Add 1461 for the preceding Cycle, and we get A.M. $2621\frac{328}{480}$ as the last of the following quartette of years—

A.M.
$2618\frac{307}{480}$
$2619\frac{314}{480}$
$2620\frac{321}{480}$
$2621\frac{328}{480}$

The Feast, therefore, was held in the 41st, 42nd, 43rd, or 44th regnal year of Amenhotep II. Progressive Time here was 15 Thoth.

Traced on the Cycle this date appears thus. Last item—

		A.M.
9	Paoni	$2593\frac{132}{480}$
10–16	,, ...	$28\frac{136}{480}$ / $2621\frac{328}{480}$

The next reported Sōthic Feast is one said to have been held on 21 Mesorē, Official Time—no regnal year given, and not even any Pharaoh's name. Yet—assuming, of course, that we are still in the same Cycle as on the last occasion—we easily ascertain all we want to know. The same process suffices. 21 Mesorē, Official = 23 Paoni, True Time. In the Annual Rising-Dates List that appears spheroidally as $1189\frac{11}{120}$. Adding 1461 for the previous Cycle, we get the following quartette of years—

A.M.
$2647\frac{23}{480}$
$2648\frac{30}{480}$
$2649\frac{37}{480}$
$2650\frac{44}{480}$

Whence we gather that the Feast was held in the 15th, 16th, 17th, or 18th regnal year of Amenhotep III (Nimmurīya = Neb-Mā-Rā), who acceded in A.M. $2632\frac{405}{480}$ = Conv. B.C. $1371\frac{75}{480}$.

Traced on the Cycle, the date appears thus. Last item—

		A.M.
16	Paoni	$2621\frac{328}{480}$
17–23	,, ...	$28\frac{136}{480}$ / $2650\frac{44}{480}$

Corresponding Progressive Time was in this case 8 Thoth.

The next reported Sōthic Feast is one said to have been held on 28 Mesorē, Official Time, in the feign of Tūt-Ankh-Amen. 1 month

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28 days behind this = 30 Paoni, True Time. But inasmuch as there is every reason to believe that the event here reported was one of a very remarkable character—in short, the Feast held in celebration of a Sōthic Rising that occurred only once in every Cycle of 1461 Years, and then always on 1 Epiphi, True Time—we may assume that the reporting Priest, or somebody else, made a mistake, and when he wrote 28 Mesorē ought really to have written 29 Mesorē. Because it is 1 month 28 days behind 29 (not 28) Mesorē, Official, that equates with 1 Epiphi, True Time.

Of course it is possible that the Report was in fact referring to the ordinary Annual Rising of 30 Paoni, True Time, the Feast, for which would have been held in due course on 28 Mesorē, Official Time: but, having regard to the close proximity of the great Menophric Occurrence, this is not likely.

In my List of Annual Rising-Dates, 1 Epiphi, True Time, appears spheroidally as $1221\frac{67}{120}$. Adding 1461 for the previous Cycle, we get the following quartette of years—

A.M.		Conv. B.C.
$2679\frac{247}{480}$		$1324\frac{233}{480}$
$2680\frac{254}{480}$		$1323\frac{226}{480}$
$2681\frac{261}{480}$	=	$1322\frac{219}{480}$
$2682\frac{268}{480}$		$1321\frac{212}{480}$

This, then, was one of the rare so-called Real Hēliacal Risings of Sōthis. Poole and others allude to it as their "B.C. 1322." Also, it is often referred to by Egyptologists as the Era of Menophres. In this, however, they appear to err. I respectfully submit that that Era began 1461 years before, in A.M. $1218\frac{247}{480}$. This was its second epochal Occurrence.

Tūt-Ankh-Amen acceded *circ.* A.M. $2680\frac{254}{480}$. Therefore this particular Feast was held in his 1st, 2nd, or 3rd regnal year. Progressive Time was 1 Thoth.

Traced along the Cycle as I am here writing it down, the epoch appears thus. Our last item was—

		A.M.
23	Paoni ..	$2650\frac{44}{480}$
24–30	,, ..	$28\frac{196}{480}$
		$2678\frac{240}{480}$
	Epiphi ..	$4\frac{28}{480}$
		$2682\frac{268}{480}$

In his *History of Egypt*, Vol. II, p. 32, Professor W. M. Flinders Petrie mentions 2 Risings (probably Feasts) that he says were "(unrecorded)"—one on 7 Thoth, and the other on 14 Thoth. The former he assigns to Conv. B.C. 1294, and the latter to Conv. B.C. 1266. I presume he is speaking of Official Time. I also assume that the events referred to belong to the same Cycle that we are now dealing with. These points understood, 1 month 28 days behind 7 Thoth, Official = 9 Epiphi, True Time. And 1 month 28 days behind 14 Thoth, Official = 16 Epiphi, True Time. Reverting, now, to my List of Annual Rising-Dates, 9 Epiphi indicates the following quartette of years—

A.M.

$2711\frac{471}{480}$
$2712\frac{478}{480}$
$2714\frac{5}{480}$
$2715\frac{12}{480}$

Whereby it appears that that particular Feast was held in the 10th or 11th (last ?) regnal year of Hor-Em-Heb, last king of the 18th Dynasty, or in either of the 2 regnal years of Rān ēsēs I of the 19th Dynasty, *i.e.*, A.M. $2712\frac{478}{480}$ and $2714\frac{5}{480}$, or even perhaps early in the reign of Seti II. This means one of the following Conv. B.C. years—

Conv. B.C.

$1292\frac{9}{480}$
$1291\frac{2}{480}$
$1289\frac{475}{480}$
$1288\frac{468}{480}$

Petrie's date—B.C. 1294—is therefore "there or thereabouts."

So, in my List of Annual Rising-Dates, 16 Epiphi, True Time, appears spheroidally as $1282\frac{52}{120}$. Adding 1461 for the preceding Cycle, we get the following quartette of years—

A.M.

$2740\frac{187}{480}$
$2741\frac{194}{480}$
$2742\frac{201}{480}$
$2743\frac{208}{480}$

Whence it appears that this particular Feast was held in the 7th, 8th, 9th, or 10th regnal year of Rāmēsēs II of the 19th Dynasty,

who appears to have acceded in A.M. $2734\frac{145}{480}$. And this means one of the following Conv. B.C. years—

Conv. B.C.
$1263\frac{293}{480}$
$1262\frac{287}{480}$
$1261\frac{280}{480}$
$1260\frac{273}{480}$

Hence, Petrie's date—B.C. 1266—is only out by some 2–5 years.

The Progressive Time dates for these two Feasts were, in the first case, 22 Mesorē, and, in the second case, 15 Mesorē.

The next reported Sōthic Feast is one said to have been held on 22 Thoth, Official Time, in the 41st regnal year of Rāmēsēs II. Counting from the time of his accession, A.M. $2734\frac{145}{480}$, that of course ought to be A.M. $2774\frac{425}{480}$ = Conv. B.C. $1229\frac{55}{480}$. Let us see, then, how the data work out.

In the Annual Rising-Dates List 24 Epiphi (which is the corresponding True Time, 1 month 28 days behind Official Time) appears spheroidally as $1314\frac{108}{480}$. Add 1461 for the preceding Cycle, and we get A.M. $2775\frac{432}{480}$ as the last of the following quartette of years—

A.M.		Conv. B.C.
$2772\frac{411}{480}$		$1231\frac{69}{480}$
$2773\frac{418}{480}$		$1230\frac{62}{480}$
$2774\frac{425}{480}$	=	$1229\frac{55}{480}$
$2775\frac{432}{480}$		$1228\frac{48}{480}$

Thus our problems all prove themselves with beautiful precision. Hitherto the beginnings of the 19th Dynasty—to which Rāmēsēs II belonged—have been very hazy, and it has therefore been somewhat difficult to construct the chronology for that particular period on a satisfactory foundation. Now, however, we *can* build it up, with some approach to accuracy, *i.e.*, within a choice-limit reduced to no more than 4 years, if always that. In the absence of data on which to work, this is unavoidable. Let us hope, however, that in this respect future archæological research, aided by good luck and generous Government subsidies, will supply our deficiencies.

For 24 Epiphi, True Time, the corresponding Progressive Time was 7 Mesorē.

The next reported Sōthic Feast is one said to have been held on 29 Thoth, Official Time, in the 2nd regnal year of Meren-Ptāh of the same 19th Dynasty, Rāmēsēs II's immediate successor, and the repulser of the first great Sea-and-Land Raid, brought against the western *rūd* of the Delta by the Libyans.

He acceded in A.M. $2802\frac{134}{480}$ = Conv. B.C. $1201\frac{346}{480}$, and reigned 20 years till A.M. $2821\frac{274}{480}$ = Conv. B.C. $1182\frac{206}{480}$. His second year was therefore A.M. $2803\frac{141}{480}$ = Conv. B.C. $1200\frac{339}{480}$.

Let us see how this case works out. 1 month 28 days behind 29 Thoth, Official = 1 Mesorē, True Time = 30 Epiphi, Progressive Time. In the Annual Rising-Dates List 1 Mesorē, True, appears spheroidally as 1343_{120}^{37}. Adding 1461 for the preceding Cycle, we get A.M. $2804\frac{148}{480}$ as the last year of the following quartette of years—

A.M.		Conv. B.C.
$2801\frac{127}{480}$		$1202\frac{353}{480}$
$2802\frac{134}{480}$		$1201\frac{346}{480}$
$2803\frac{141}{480}$	=	$1200\frac{339}{480}$
$2804\frac{148}{480}$		$1199\frac{332}{480}$

The year we want—A.M. $2803\frac{141}{480}$ —appears as the 3rd in this quartette.

The last reported Sōthic Feast is one said to have been held on 1 Tybi, Official Time (at least I presume that it is Official), in the 11th regnal year of Thakalath II of the 22nd Dynasty. 1 month 28 days behind this date = 3 Athyr, True Time. In the List of Annual Rising-Dates that appears spheroidally as 255_{120}^{81}. We are now, however, another Cycle on. On this occasion, therefore, we have to add 2922 for 2 preceding Cycles of 1461 Years each. This gives us A.M. $3177\frac{324}{480}$ as the last year of the following quartette of years—

A.M.		Conv. B.C.
$3174\frac{303}{480}$		$829\frac{177}{480}$
$3175\frac{310}{480}$		$828\frac{170}{480}$
$3176\frac{317}{480}$	=	$827\frac{163}{480}$
$3177\frac{324}{480}$		$826\frac{156}{480}$

Is this supported by the Cycle as we have been writing it down? It is. The last item noticed was—

			A.M.
1	Epiphi	..	.. $2682\frac{268}{480}$
2–30	„	..	.. $\left\{\begin{matrix}117\frac{332}{480} \\ 2800\frac{120}{480}\end{matrix}\right.$
1–30	Mesorē	..	.. $\left\{\begin{matrix}121\frac{360}{480} \\ 2922\end{matrix}\right.$
1–30	Thoth	..	.. $\left\{\begin{matrix}121\frac{360}{480} \\ 3043\frac{360}{480}\end{matrix}\right.$
1–30	Paophi	..	.. $\left\{\begin{matrix}121\frac{360}{480} \\ 3165\frac{240}{480}\end{matrix}\right.$
1–3	Athyr	..	.. $\left\{\begin{matrix}12\frac{84}{480} \\ 3177\frac{324}{480}\end{matrix}\right.$

In this case the corresponding Progressive Time was 28 Pharmūthi.

Professor Breasted speaks of a Rising that occurred in the reign of Aahmēs I (See *Ancient Records*, Vol. II, p. 709) : but, as no details are given, no calculations or deductions can be made from it.

Thus, right up to the end, in every case that I set out to deal with, I have made good my claim ; my figures trooping up precisely as and when they are wanted, and falling easily and naturally into their proper places with meticulous exactitude.

There is, however, one more matter that it seems desirable to allude to. In *Horæ Ægyptiacæ*, at p. 31, Mr. R. S. Poole states as follows :—

"Rāmēsēs III, the fourth legitimate successor of Rāmēsēs II, records, in a calendar of festivals inscribed on the great temple erected by him in western Thebes (the Rameseum of Medeenet-Haboo), that in his reign 'the Manifestation of Sōthis' took place on the first day of Thoth, the first month ; although, from the interval between the reigns of Rāmēsēs II and Rāmēsēs III, it is obvious that Sōthis could not have risen visibly before the sun on the first day of Thoth in the reign of the latter king ; yet I have no doubt that the Calendar of Medeenet-Haboo is one of a Vague Year ; and it appears that the Panegyry of 'the Manifestation of Sōthis' (the rising one hour before the sun) continued to be celebrated on the first day of Thoth as long as the phenomenon occurred in the course of that month ; this, for the space of 120 Julian years."

I doubt very much whether it was Rāmēsēs III who recorded this. I also demur to the terms of the record itself, as explained by Poole. If, by "first day of Thoth" is meant 1 Thoth on the Fixed Clock or Spheroid, this could not possibly have happened till Progressive 1 Thoth (the calendrical indicator), in the course of its cyclical tour, had reached the day after the Autumnal Equinox at 0, *i.e.*, spheroidal point A.M. 2922 = Conv. B.C. 1082.

This excludes all idea of the age of Rāmēsēs II or that of Rāmēsēs III. Rāmēsēs II's regnal period was A.M. $2734\frac{145}{480}$—$2802\frac{134}{480}$ = Conv. B.C. $1269\frac{335}{480}$—$1201\frac{346}{480}$. And Rāmēsēs III's regnal period was approximately A.M. 2846—2877 = Conv. B.C. 1158—1127. On our present data it is impossible to provide him with another 45 years of life.

In short, A.M. 2922 was the age of Rāmēsēs XI. It must therefore have been in *his* reign or in that of Rāmēsēs XII—in the year Conv. B.C. 1082—that "'the Manifestation of Sōthis' took place" as stated in the inscription above referred to.

Between Rāmēsēs II and Rāmēsēs III there was a stretch of some 46 years. To say that the 'Manifestation' could have been *celebrated on the same date* by both these Pharaohs is to suggest an impossibility. True, the 'Manifestation' occurs in the same month for a period of $121\frac{3}{4}$ years (representing Poole's inaccurate 120 Julian years): but it does not occur *on the same day of the month* all that time! It occurs on the same day of the month successively *for only 4 ordinary years* (representing the spheroidal division $4_{\frac{7}{120}}$), but then it passes on to the next day of the month. Thus 46 years means about 12 such shifts. From Rāmēsēs II to A.M. 2922 there was a stretch of some 121 years. That meant about 33 such shifts.

From all the foregoing data and calculations we are now in a position to construct the following revised

Table of Reported Sōthic Feasts.

On the basis of each Annual Rising occurring 10 months after F. 1 Thoth at Spheroidal points $1218\frac{247}{480}$—$1221\frac{268}{480}$ = F. 1 Epiphi.

Official Time always 2 months (1 month 28 days for Feasts) ahead of Cyclical or True Spheroidal Time.

Progressive Time always the same remove *backwards* from F. 1 Epiphi as True Time is *forwards* from 0 (*Zero*), at the Autumnal Equinox.

A.M.	Progressive Clock Time.	Official or Reported Time of Feasts.	Cyclic or True Time of Risings.
$1771\frac{328}{480}$ Senwosri III. 7th yr.	14 Pharmūthi.	"15th day of 8th month." Really 15 Tybi.	17 Athyr.
$2476\frac{360}{480}$ Amenhotep I. 9th yr.	21 Paophi.	9 Epiphi.	11 Pakhons.
$2496\frac{427}{480}$ to $2499\frac{448}{480}$ Thothmēs I. 9th, 10th, 11th, or 12th yr.	15 Paophi.	14 Epiphi.	16 Pakhons.
$2526\frac{150}{480}$ Thothmēs III. 3rd yr.	8 Paophi.	21 Epiphi.	23 Pakhons.
$2556\frac{360}{480}$ Thothmēs III. 33rd yr.	1 Paophi.	28 Epiphi.	30 Pakhons.
$2590\frac{111}{480}$ to $2593\frac{432}{480}$ Amenhotep II.	22 Thoth.	7 Mesorē.	9 Paoni.
$2618\frac{307}{480}$ to $2621\frac{328}{480}$ Amenhotep II.	15 Thoth.	14 Mesorē.	16 Paoni.
$2647\frac{23}{480}$ to $2650\frac{44}{480}$ Amenhotep III.	8 Thoth.	21 Mesorē.	23 Paoni.
$2679\frac{247}{480}$ to $2682\frac{268}{480}$ Tūt-Ankh-Amen.	1 Thoth.	28 (29?) Mesorē.	1 Epiphi.

A.M.	Progressive Clock Time.	Official or Reported Time of Feasts.	Cyclic or True Time of Risings.
$2711\frac{411}{480}$ to $2715\frac{12}{480}$ Hor-Em-Heb, or Rāmēsēs I, or Seti I.	22 Mesorē.	7 Thoth.	9 Epiphi.
$2740\frac{187}{480}$ to $2743\frac{208}{480}$ Rāmēsēs II.	15 Mesorē.	14 Thoth.	16 Epiphi.
$2775\frac{432}{480}$ Rāmēsēs II.	7 Mesorē.	22 Thoth.	24 Epiphi.
$2803\frac{141}{480}$ Meren-Ptāh. 2nd yr.	30 Epiphi.	29 Thoth.	1 Mesorē.
2922 Rāmēsēs XI ?	F. 1 Thoth.	F. 1 Thoth.	F. 1 Thoth.
$3174\frac{303}{480}$ to $3177\frac{24}{480}$ Thakalath II.	28 Pharmūthi.	1 Tybi.	3 Athyr.

We now sit entrenched along what I affirm is an Impregnable Line. Based on the Cycle of 1461 Years as above conceived, and relying on the afore-mentioned Heb List, and the foregoing Table of Reported Sōthic Feasts and Risings, and also on the afore-mentioned Table of Annual Rising-Dates, we get the following broad results. For the present they are merely a summary.

1st Dynasty.

R. S. Poole imagined that Amenembat II of the 12th Dynasty flourished about Conventional B.C. 2005 (= A.M. 1999), at which time, he says, there was a Coincidence between the Vague Year and the First Tropical Year. But, as a matter of fact, Amenemhat II's regnal period was A.M. $1712\frac{226}{480}$—$1747\frac{54}{480}$ = Conv. B.C. $2291\frac{184}{480}$—$2256\frac{426}{480}$; and A.M. 1999 was really an early

stage of the long-drawn-out Hyksōs Domination in Khem, when, all over the country, there were numerous Romic dynasts, vassals of the Hyksōs—all struggling against them and with each other, especially against one of themselves, the House of Thebes, who were ever supported by their staunch friends of El Kab.

From the premisses he adopts, Poole argues that Conv. B.C. 2717 was the Era of the Commencement of the Egyptian (Romic?) race, and that of Mēnēs (*Horæ Ægyptiacæ*, pp. 62 *et seq.*).

Taking the 1461-Years Cycle as beginning at A.M. 0 (*Zero*), this conclusion of Poole's means that what I call the Commencement of the 1st G. P. Y. of the 2nd Cycle was the Commencement of the Era of Mēnēs. Also that what I call the Commencement of the 2nd G. P. Y. of the 2nd Cycle was the Commencement of the Era of Khūfū.

This I beg to deny. I affirm that the Commencement of the 4th G. P. Y. of the 1st Cycle was the true Commencement of the Era of Mēnēs: and I further say that the Commencement of the 1st G. P. Y. of the 2nd Cycle was the true Commencement of the Era of Khūfū.

Hence we get—

Era of Mēnēs: A.M. $1095\frac{360}{480} + 1\frac{7}{480}$ = First Year A.M. $1096\frac{367}{480}$ = Conv. B.C. $2907\frac{113}{480}$.

Later on occurred the first happening of the rare event known as the Real Hēliacal Rising of Sōthis, or Sirius (Dog-Star),—rare because it occurs only once in every Cycle of 1461 Years. Of course it had happened countless times before: but it is *called* the "first happening" because Mēnēs instituted the Cyclic Calendar, beginning arbitrarily with A.M. 0.

The particulars of this "first happening" are—

A.M.		Conv. B.C.
$1218\frac{247}{480}$		$2785\frac{233}{480}$
$1219\frac{254}{480}$		$2784\frac{226}{480}$
$1220\frac{261}{480}$	=	$2783\frac{219}{480}$
$1221\frac{268}{480}$		$2782\frac{212}{480}$

In the days of Pepi I of the 6th Dynasty (say A.M. $1728\frac{115}{480}$ —$1749\frac{75}{480}$ = Conv. B.C. $2275\frac{65}{480}$—$2254\frac{405}{480}$), the Era thus distinguished appears to have become known as the Era of Men-Nofer, subsequently Hellenised into Menōphrēs.

4th Dynasty.

For the most part this period is wrapped in obscurity. Having arrived, however, at a decision regarding the Era of Khūfū, I venture to submit the following very rough construction, which is, however, practically "clinched" by Shepseskāf's Sed Heb.

Era of Khūfū: A.M. $1461 + 1\frac{7}{480} =$ First year A.M. $1462\frac{7}{480} =$ Conv. B.C. $2541\frac{473}{480}$.

Hence, adopting Breasted's list of names and length of reigns—

	Yrs.	A.M.	Conv. B.C.
Khūfū ..	23	.. $\left\{\begin{matrix}1462\frac{7}{480} \\ \text{to} \\ 1484\frac{161}{480}\end{matrix}\right\} =$	$\left\{\begin{matrix}2541\frac{473}{480} \\ \text{to} \\ 2519\frac{319}{480}\end{matrix}\right\}$
Dedefrē ..	8	.. $\left\{\begin{matrix}1484\frac{161}{480} \\ \text{to} \\ 1491\frac{210}{480}\end{matrix}\right\} =$	$\left\{\begin{matrix}2519\frac{319}{480} \\ \text{to} \\ 2512\frac{270}{480}\end{matrix}\right\}$
Khafrē ..	x	?	?
Menkūrē ..	x	?	?
——— ..	x	–(1658) ? =	–2346
———	18	(1658–1675) ? =	2346–2329
Shepseskāf ..	4	(1675–1678) ? =	2329–2326

(He celebrated Sed Heb for A.M. $1674\frac{1}{16}$, and was therefore a contemporary of Senwosri I of the 12th Dynasty.)

	Yrs.	A.M.	Conv. B.C.
(Aimhotep) ? ..	2	.. (1678–1680) =	2326–2324

Period:—A.M. $1462\frac{7}{480}$—1680 = Conv. B.C. $2541\frac{473}{480}$—2324 $= 218\frac{473}{480}$ years. According to Breasted the known minimum of duration was 150 years.

Zodiacal Eras.

As the Tauric Era (so far as I can reckon) was Conv. B.C. 4557—$2401\frac{1}{3}$ $(\frac{160}{480})$, the 1st Dynasty must have commenced $505\frac{273}{480}$ years before the close of that Era. So the 4th Dynasty must have commenced $140\frac{153}{480}$ years before the close of the Tauric Era, and overshot it by going into the first $77\frac{2}{3}$ years of the Ariēs Era.

I arrive at the Tauric Era thus—

The First Point of *Sign* Ariēs retrogresses through the entire 12 *Constellations* of the Zodiac in a period of 25,868 years, remaining in

each *Constellation* for $2155\frac{2}{3}$ years, and in each Degree of each *Constellation* for $71\frac{77}{90}$ years. It is now somewhere in the 30th Degree of *Const.* Aquarius, which it seems to have entered in *circ.* A.D. 1910, and which it will not leave till *circ.* A.D. $1981\frac{77}{90}$. It therefore moved through—

1st Deg. of *Const.* Gemini during Conv. B.C.		$\left\{\begin{matrix}4628\frac{77}{90}\\ \text{to}\\ 4557\end{matrix}\right.$
,,	Taurus	,, $\left\{\begin{matrix}2473\frac{77}{90}\\ \text{to}\\ 2401\frac{1}{3}\end{matrix}\right.$
,,	Ariēs	,, $\left\{\begin{matrix}317\frac{77}{90}\\ \text{to}\\ 245\frac{2}{3}\end{matrix}\right.$

The above would permit of a great part of *Sign* Ariēs having coincided with *Const.* Ariēs in the lifetime of Hipparchus (B.C. 190—120), though just after Conv. B.C. $173\frac{71}{90}$ the First Point of *Sign* Ariēs would have been entering the 29th Deg. of *Const.* Piscēs.

The 3 Zodiacal Eras just mentioned would have been—

Gemini ..	Conv. B.C.	$\left\{\begin{matrix}6712\frac{2}{3}\\ \text{to}\\ 4557\end{matrix}\right.$	= A.M. (Before *Zero*	$\left\{\begin{matrix}2708\frac{2}{3}\\ \text{to}\\ 553)\end{matrix}\right.$
Taurus ..	,,	$\left\{\begin{matrix}4557\\ \text{to}\\ 2401\frac{1}{3}\end{matrix}\right.$	= ,, (Before *Zero*	$\left\{\begin{matrix}553\\ \text{to}\\ 1602\frac{2}{3})\end{matrix}\right.$
Ariēs ..	,,	$\left\{\begin{matrix}2401\frac{1}{3}\\ \text{to}\\ 245\frac{2}{3}\end{matrix}\right.$	= ,,	$\left\{\begin{matrix}1602\frac{2}{3}\\ \text{to}\\ 3758\frac{1}{3}\end{matrix}\right.$

In *Myths and Marvels of Astronomy*, at p. 340, Proctor the astronomer states that the Great Pyramid was built at the time when the Pleiadēs were at their highest above the horizon at noon, *i.e.*, made their noon culmination, and when together they and the Sun (the latter in Taurus) opened the year with commencing spring. Alpha of the Dragon was then the Pole-Star, and was due north below the Pole, *i.e.*, was at its subpolar meridional passage, and thence shone directly through the long tunnel or corridor extending downwards aslant from the northern face of the pyramid. This epoch,

he says, was somewhere between B.C. 2200 and B.C. 2100—say B.C. 2170.

Now, the builder of the Great Pyramid is supposed to have been Khūfū of the 4th Dynasty, whose regnal period, according to my chronology, was A.M. $1462\frac{7}{480}$—$1484\frac{161}{480}$ = B.C. $2541\frac{473}{480}$—$2519\frac{313}{480}$.

Moreover, I make the Tauric Era roughly B.C. 4557—$2401\frac{1}{3}$. Possibly this is about $95\frac{2}{3}$ years too high—thus reducing the Era to say B.C. $4461\frac{1}{3}$—$2305\frac{2}{3}$.

B.C. $2305\frac{2}{3}$ would have been the period just before the time when the Sun was passing out of Taurus into the 30th degree of Ariēs. Hence, Proctor's B.C. 2170 was seemingly not in Taurus at all, but in Ariēs, say somewhere in its 29th degree, and nearing its 28th degree. This, of course, is calculating on the basis of the Autumnal Equinox being at its conventionally recognised point.

But, when Jesus Christ was born, the Equinox was *not* at that point. Owing to Precession it had come down lower. It is now (A.D. 1919) somewhere in the 30th degree of Aquarius, which it entered at about say A.D. 1910. Therefore it entered 30th degree of Piscēs from Ariēs about say B.C. $245\frac{2}{3}$. Hence, when Christ was born the Autumnal Equinox was really somewhere about the 27th degree of Piscēs.

Therefore, to get a True B.C. date for the Pleiadic Epoch, we must subtract $245\frac{2}{3}$ from the above B.C. $2305\frac{2}{3}$. That gives us B.C. 2060, *i.e.*, about 110 years short of Proctor's B.C. 2170.

If, on the other hand, we retain my above figure, B.C. $2401\frac{1}{3}$, as fairly correct, and from that subtract this $245\frac{2}{3}$, we get B.C. $2155\frac{2}{3}$—which is only short of Proctor's epoch by $14\frac{1}{3}$ years; and as we are dealing, not with exact estimates, but only with approximate periods, this slight difference is really negligible.

Now, if these considerations be sound, what are we to deduce from them? Do they not seem to suggest that some later king than Khūfū was the builder of the Great Pyramid? B. C. 2170 = A. M. 1834, really indicates the period of Pepi II (Phiops—Cp. Cheops) of the 6th Dynasty. It is noteworthy that Amenemhat III of the 12th Dynasty (another builder) was for some time his contemporary.

The same apparent interchangeability or confusion between *P* and *Ch* is met with in *Pelethites* and *Chelethites*, or *Cherethites*, in

connection with the original name of the Philistines. The old Romic "Shutter" sign for *P* was very like the oldest Phœnician, Greek and Latin signs for *Kh*. This may explain the muddle.

5th Dynasty.

Another nebulous age. We know, however, that an Official named Sabū, or Ibebi, flourished not only in the reign of Unis, the last king of the 5th Dynasty, but also in that of Teti, first king of the 6th Dynasty (*Anc. Rec.*, Vol. I, p. 131). Moreover, according to Breasted, the 5th Dynasty endured about 125 years (*Ib.*, p. 40). Now, by my calculations Teti's regnal period was A.M. $1694\frac{177}{480}$—$1723\frac{380}{480}$ = Conv. B.C. $2309\frac{303}{480}$—$2280\frac{100}{480}$. If that figuring be right, the period of the 5th Dynasty was approximately A.M. $1568\frac{267}{480}$—$1694\frac{177}{480}$ = Conv. B.C. $2435\frac{213}{480}$—$2309\frac{303}{480}$ = over 3 centuries later than the age roughly reckoned out for it by Breasted: or say about the time of Gūdea of Lagash and his successors. The middle of this 5th Dynasty period would have been *circ.* A.M. 1633 = Conv. B.C. 2371.

In his *Hist. of Egypt*, opp. p. 46, Breasted gives a reproduction of the Palermo Stone, showing annals of the earliest kings from pre-dynastic times to this middle of the 5th Dynasty, "when the copy was made." And at p. 46 (see also p. 14) he speaks of "the more than four hundred years during which the first two dynasties ruled." Breasted gives B.C. 3400 as the date of the accession of Mēnēs and Beginning of the Dynasties—approximate, of course. My date, however, for that is Conv. B.C. $2907\frac{113}{480}$. Further, we have just seen that the 5th Dynasty began about Conv. B.C. 2436. If, therefore, the 4th Dynasty lasted some 219 years, and the 3rd Dynasty (as Breasted says) 80 years—together 299 years—there remain, according to my reckoning, only about 173 years for the duration of the first two Dynasties, *i.e.*, assuming that Dynasties III and IV followed Dynasties I and II like caterpillars on the march! Probably, however, they did not. Indeed, R. S. Poole says outright that Dynasties I and II were for the most part contemporary with Dynasties III and IV (*Horæ Ægyptiacæ*, pp. 82, 103, 108).

Owing to the *liaisons* between Dynasties I and II and Dynasties III, IV, V, and VI, we cannot possibly put back the Calendar by another full Cycle of 1461 years, as some people seem to suggest.

6th Dynasty.

Much turns on a correct interpretation of the data that we possess regarding this important period.

In *The Secret of Egyptian Chronology*, in connection with the story of Una, or Uni, and his exploits at Hatnūb for his royal master Merenrā I, at pp. 76 *et seq.*, I have explained how I first arrived at the conclusion that Merenrā I's accession-date fell at A.M. $1747\frac{17}{18}$ (I was then working on the basis of a year of 365 days), and Pepi II's period at A.M. $1751\frac{17}{18}$—$1841\frac{17}{18} + x$. I now propose to show how the problems of the period can be solved and even better elucidated by working straightaway on the basis of a year of $365\frac{1}{4}$ days. Also, a few little difficulties which I had not then surmounted will now be cleared up.

Pepi II is reported to have lived at least 100 years, during most of which he was on the throne : and Breasted remarks that there is no reason to disbelieve the tradition. It need not therefore surprise us when we discover that he must have celebrated no fewer than 3 Hebs, or Festivals, of which we shall find that 2 were Seds ($30\frac{7}{16}$ years) and one was a Hunti ($121\frac{3}{4}$ years).

We are told by Manētho that Pepi II (whom he calls Phiops) began to reign when he was 6 years old ; and R. S. Poole states that he celebrated many "Royal Panegyries, or Jubilees" : though his ideas regarding these "Jubilees," like those of most Egyptologists, were rather woolly and distorted (*Horæ Ægyptiacæ*, p. 135).

All this fits in well with my chronology and adjustments : for the Hebs that Pepi II celebrated were obviously—

Sed Heb	for A.M.	$1765\frac{6}{16}$
Sed Heb	,, ,,	$1795\frac{3}{16}$
Hunti Heb	,, ,,	$1826\frac{4}{16}$

Of course they appeared differently in my earlier calculations, made on a different basis.

As regards the first of these Hebs, Professor Petrie mistakenly ascribes it to Pepi I. Moreover, it is said to have occurred in Pepi I's 18th year. In fact it was in the 18th year of Pepi II : but the 18th year of his *life*, not of his *reign* ! So with respect to the others also.

The way I work things out is as follows : Assuming that Pepi II celebrated the Sed Heb for A.M. $1765\frac{6}{16}$ in the 18th year of his

life, he must have been born in A.M. $1748\frac{6}{16}$. On calculations which need not be set out here, the exact date was A.M. $1748\frac{68}{480}$. Then, as he was 6 years of age when he acceded, his accession must have been in A.M. $1753\frac{68}{480}$, *i.e.*, on a spheroidal-year basis, A.M. $1753\frac{103}{480}$.

Next we learn that another Sed Heb was celebrated by Pepi II "at the time of the 25th Numbering." It seems that a kind of stock-taking of the royal possessions throughout the land was made periodically by the Treasury Officials. These fiscal measures were known as "Numberings," and, as Breasted informs us, they served as a partial basis for chronological reckoning. In those early days they were made every two years, though eventually they became annual.

The Sed here referred to must have been that for A.M. $1795\frac{3}{16}$. If, so far as Pepi II's records are concerned, the first of such 2-yearly "Numberings" took place in the year of his birth, A.M. $1748\frac{68}{480}$, the 24th would have fallen in A.M. $1794\frac{380}{480}$. The next year was A.M. $1795\frac{397}{480}$ (the year of Sed Heb A.M. $1795\frac{3}{16}$) and the "25th Numbering" would have been due in the following year, A.M. $1796\frac{414}{480}$, which would have been Pepi II's 49th year. This, therefore, seems quite near enough to warrant the conclusion that we have hit upon the right chronology. It must be remembered that we are not told that the 2nd Sed Heb was in the same year exactly as "the 25th Numbering."

The next Heb noticed—Hunti or Quadruple for A.M. $1826\frac{4}{16}$—must have been celebrated by Pepi II in his 78th year, A.M. $1826\frac{427}{480}$, on a spheroidal-year basis, but A.M. $1825\frac{68}{480}$ if taken in ordinary years. I therefore construct the Dynasty thus—

		Yrs.	A.M.	
Teti	.. ..	30	$1694\frac{177}{480}$–$1723\frac{380}{480}$	
Aty	.. ..	6	$1723\frac{380}{480}$–$1728\frac{415}{480}$	
Pepi I	.. ..	21	$1728\frac{415}{480}$–$1749\frac{75}{480}$	
Merenrā I	.. ..	5	$1749\frac{75}{480}$–$1753\frac{103}{480}$	
Pepi II	.. ..	90 + x	$1753\frac{103}{480}$–$1843\frac{246}{480}$	+x
Merenrā II	.. ..	1	?	
Men-kā-rā	.. ..		?	
Neter-kā-rā (Nitōkris)	..	12	1870 –1883 ?	

Period :—A.M. $1694\frac{177}{480}$—1883 = Conv. B.C. $2309\frac{303}{480}$—2121 = about 189 years. Breasted gives 150 years as the known minimum.

From the foregoing adjustments I deduce roughly the probable period of the 5th Dynasty, *supra*.

Lastly, note that in the reign of Pepi I it began to be customary to call the Era distinguished by the happening of the First Real Hēliacal Rising of Sōthis (A.M. $1218\frac{247}{480}$—$1221\frac{248}{480}$) the Era of Men-Nofer—afterwards corrupted by the Greeks into Menophrēs.

The 11th Dynasty.

We can only attempt the re-construction of this Dynasty approximately and with gaps, thus—

	Yrs.	*Cir.* Conv. B.C.
Intef I	50 + x	$2514\frac{284}{480}$–$2464\frac{321}{480}$
Intef II	?	
Mentūhotep I ..	?	
Mentūhotep II ..	?	
Mentūhotep III ..	2 + x	$2408\frac{29}{480}$?
Mentūhotep IV ..	46 + x	$2408\frac{29}{480}$–$2352\frac{194}{480}$
Mentūhotep V ..	8 + x	$2352\frac{184}{480}$–$2345\frac{145}{480}$

Period :—Cir. A.M. $1489\frac{196}{480}$—$1658\frac{335}{480}$ = Conv. B.C. $2514\frac{284}{480}$—$2345\frac{145}{480}$. According to Breasted at least 160 years. It thus commenced $204\frac{426}{480}$ years before the 6th Dynasty!

Note.—Mentūhotep III, whose Vizier was named Amenemhat, must have flourished at least some 54 years before Conv. B.C. $2353\frac{331}{480}$ (commencement of 12th Dynasty), which takes us back to Conv. B.C. $2408\frac{29}{480}$.

Sign Ariēs (Ram) was passing out of *Constellation* Taurus (Bull) into *Constellation* Ariēs just after Conv. B.C. $2401\frac{1}{3}$, *i.e.*, over a generation (say $47\frac{29}{480}$ years) before the accession of Sehetep-ab-rā as Amenemhat I of the 12th Dynasty. Hence, the Vizier's name, as the first known name compounded with Ammon, Amon, or Amen, the Zodiacal Ram, was some 8 years earlier than the epoch of change from the Taurus Era into the Ariēs Era—later on officially recognised by Amenemhat I of the 12th Dynasty.

Breasted states that in after centuries Mentūhotep IV was regarded as the great founder and establisher of Theban supremacy.

The 12th Dynasty.

(See particulars and remarks, *supra*.)

Hyksōs Domination.

Between the fall of the 12th Dynasty about A.M. $1861\frac{365}{480}$ = Conv. B.C. $2142\frac{115}{480}$ and the founding of the renowned 18th Dynasty by Aahmēs I, *circ.* A.M. $2444\frac{70}{480}$ = Conv. B.C. $1559\frac{410}{480}$, there is a stretch of $582\frac{105}{480}$ years—a conclusion probably not unwelcome to some schools of Egyptology.

It seems that in A.M. 1999 (= Conv. B.C. 2005), the 1st day of theRomic Vague Year and the 1st day of the first Romic Tropical Year fell together, at what astronomers say was our 7th January. Ordinarily the Tropical Year began at 1 Khoiak, the day after the Winter Solstice = our 22 December. 7th January would ordinarily = 17 Khoiak. Be this as it may, R. S. Poole (mistakenly, as I submit) represents the year Conv. B.C. 2005 as having been the time of Amenemhat II of the 12th Dynasty. It was not. It was an early stage, comparatively, of the Hyksōs Domination in Khem. Throughout the land there were then many vassal Romic dynasts (inclusive of the House of Thebes and their friends of El Kab), all struggling against their overlords and with each other, and especially jealous of Thebes.

In this connection mention must be made of a stēlē of Rāmēsēs II, dated in the 400th year of "the King of Upper and Lower Khem, Set-Aa-Pehti, son of the Sun (*i.e.*, *ab-Rā*), Nūbti Set, Beloved of Horākhti" (Petrie, *Hist. of Egypt*, Vol. I, p. 244; Vol. III, p. 74; *Revue Archéologique*, XI, pl., IV, trans. in *Records of the Past*, IV, 33). Rāmēsēs II claimed descent from this Set-Aa-Pehti, and, if I remember aright, his vizier Seti is depicted rendering him worship. Rāmēsēs II's regnal period is about A.M. $2734\frac{145}{480}$—$2802\frac{134}{480}$ = Conv. B.C. $1269\frac{335}{480}$—$1201\frac{346}{480}$. 400 years before this was A.M. $2334\frac{145}{480}$—$2402\frac{134}{480}$ = Conv. B.C. $1670\frac{335}{480}$—$1601\frac{346}{480}$. This means from about 336 to 404 years after Conv. B.C. 2005, and from about 111 to 42 years before the founding of the 18th Dynasty by the expulsion of the Hyksōs.

Some writers have thought that Set-Aa-Pehti was a Hyksōs king. That is not my view at all. I suggest he was one of the above-mentioned vassal Romic dynasts—that is, one of them who had particularly distinguished himself, and even become heroic in the eyes of his countrymen. Very probably he was a Theban.

The name Set (Sūtekh), though it was Hyksōs, does not necessarily imply a Hyksōs lineage. In those days the Romic vassal dynasts alluded to might easily have borne such a name. Moreover, Rāmēsēs II is much more likely to have had an ancestor in one of them than in a Hyksōs king.

Who the Hyksōs really were, is still an unanswered question. They were undoubtedly of the stock represented by the subsequent Kings of Kadēsh-on-Orontēs. These must have been principally Amoritic, and therefore Rhodo-Leukochroic: but very likely there were strong strains in them of Mitannian (*i.e.*, Rhodo-Tūrānian) and Hittite blood. Also it must be remembered that for several centuries the *'Abr*-Aamū, *'Ibr*-Aamū, Abramū, or Abramites of Hebron (the real and *only* Hebrews), and the Amorites of the same district, had been confederates (*Genesis* xiv 13). Probably, indeed, we see in them the genuine *Khabiri*—quite different, both etymologically and ethnically, from the *Abiri*. It is by no means impossible that they were the hated rulers of Khem (or were represented amongst those rulers) in the long period of the so-called Hyksōs Domination.

The 18th Dynasty.

The 12th Dynasty started its career in A.M. $1650\frac{343}{480}$ = Conv. B.C. $2353\frac{131}{480}$, *i.e.*, about $47\frac{29}{480}$ years after the close of the Tauric Era. It came to an end about A.M. $1861\frac{365}{480}$ = Conv. B.C. $2142\frac{115}{480}$. It was thus very long anterior to the days of the famous Set-Aa-Pehti, whoever he may have been. The House of Thebes was a development out of the dissolved elements of the old Dynasty. It was out of this House of Thebes that the genius arose who was destined eventually to expel the Hyksōs intruders from Khem, and to restore the Romiū to their "place in the Sun" as an independent nation. This was Aahmēs I, son probably of Kemēs, and first king and founder of

the renowned 18th Dynasty, which I now venture to re-construct as follows—

Ahmēs I .. { 25 yrs. .. A.M. $2444\frac{70}{480}$–$2468\frac{238}{480}$ = Conv. B.C. $1559\frac{410}{480}$–$1535\frac{242}{480}$.

Amenhotep I .. { 21 yrs. .. A.M. $2468\frac{238}{480}$–$2488\frac{371}{480}$ = Conv. B.C. $1535\frac{242}{480}$–$1515\frac{109}{480}$.

Thothmēs I .. { 21 yrs. .. A.M. $2488\frac{371}{480}$–$2509\frac{31}{480}$ = Conv. B.C. $1515\frac{109}{480}$–$1494\frac{448}{480}$. (See *Note* regarding his death, *infra*.)

Thothmēs II .. { 16 yrs. .. A.M. $2509\frac{31}{480}$–$2524\frac{136}{480}$ = Conv. B.C. $1494\frac{448}{480}$–$1479\frac{344}{480}$.

(Hatshepsūt .. 22 yrs. .. A.M. $2511\frac{45}{480}$–$2532\frac{192}{480}$.)

Thothmēs III (Manakhbiria = *Mēn-Kheper-Rā*). .. 53 yrs., 10 months, 26 days. A.M. 2524 $\frac{136}{480}$–2578$\frac{27}{480}$ = Conv. B.C. 1479 $\frac{344}{480}$–1425$\frac{453}{480}$. Acceded 4 Pakhons, Official Time = our 24 May: = 4 Phamenoth True Time = our 25 March. Queen Hatshepsūt died in her 22nd = Thothmēs III's 9th, regnal year = A.M. $2532\frac{192}{480}$ = Conv. B.C. 1571 $\frac{288}{480}$. Thothmēs III himself died 30 Phamenoth, Official Time = 30 Tybi, True Time = Our 19 February. He was the great military genius who smashed the Hyksōs and founded Khem's Northern Empire in Khūrū, Zāhi, and Nāhārin. Also really the "Yāhveh" who gave Khārū to the half-Romic "People of Mes-Rā," "People of the Abir, or Zodiacal Bull," Children of I-Sarah-El, or Josephites, as Romic Colonists, by way of inheritance for ever, but on conditions. No "Judah" in existence, or even heard of, then.

Amenhotep II .. { 46 yrs. .. A.M. $2578\frac{27}{480}$–$2623\frac{342}{480}$ = Conv. B.C. $1425\frac{453}{480}$–$1380\frac{138}{480}$.

Thothmēs IV	10 yrs.	A.M. $2623\frac{342}{480}$–$2632\frac{405}{480}$ = Conv. B.C. $1380\frac{138}{480}$–$1371\frac{75}{480}$.
Amenhotep III (Nimmurīya=*Neb-mā-Rā*)	31 yrs.	A.M. $2632\frac{405}{480}$–$2663\frac{135}{480}$ = Conv. B.C. $1371\frac{75}{480}$–$1340\frac{345}{480}$.
Amenhotep IV (*Nefer-Kheper-Rā.*)	17 yrs.	A.M. $2663\frac{135}{480}$–$2679\frac{247}{480}$ = Conv. B.C. $1340\frac{345}{480}$–$1324\frac{233}{480}$. He was Akh-En-Aten. Also known in the North as Naphkhūria.
Rā-Smenkh-Kā	2 yrs.	A.M. $2679\frac{247}{480}$–$2680\frac{254}{480}$ = Conv. B.C. $1324\frac{233}{480}$–$1323\frac{226}{480}$.
Tūt-Ankh-Amen	11 yrs.	A.M. $2680\frac{254}{480}$–$2690\frac{324}{480}$ = Conv. B.C. $1323\frac{226}{480}$–$1313\frac{156}{480}$.
Āy	13 yrs.	A.M. $2690\frac{324}{480}$–$2702\frac{408}{480}$ = Conv. B.C. $1313\frac{156}{480}$–$1301\frac{72}{480}$.
Hōr-Em-Heb	11 yrs.	A.M. $2702\frac{408}{480}$–$2712\frac{478}{480}$ = Conv. B.C. $1301\frac{72}{480}$–$1291\frac{2}{480}$.

Note.—It is the death of Thothmēs I that is referred to in the following passage—

> "And it came to pass in the course of those many days, that the king of Egypt died" (*Exodus* ii, 23).

In the Authorised Version, instead of "in the course of those many days," we find "in process of time." These renderings, and other expressions of a like vague nature, are Translators' mistakes, appearing throughout the Bible (both Testaments), for the intercalary period at the end of the Hebrew Calendar (which the Translators evidently did not understand), when the Ancient Hebrew Solar Cycle of 15 Lunar Years, every 3rd year, after what would be our 19—20 September, added an extra month of 34 days—called *Vē Adar*—to harmonise Lunar with Solar or Natural Time. It must be remembered that *Exodus* was composed in "Jewry."

We have just seen that Thothmēs I died in A.M. $2509\frac{31}{480}$ = Conv. B.C. $1494\frac{443}{480}$, *i.e.*, in A.M. 2510. By the Romic Calendar the date was 21 Epiphi, Official Time. True Time for it was 21 Pakhons = our 10 June. Progressive Clock Time (*i.e.*, the kind that was similar to Official Time, but that reckoned from the Autumnal Equinox at 0) was 10 Paophi = our 1 November.

On the Ancient Hebrew Solar Cycle (which is what Ezra was thinking of when he penned the passage above quoted) A.M. 2510 was what was called in "Jewry" a "3rd year." Accordingly, after what would be our 19—20 September, *Vē Adar* had to be intercalated. Ezra, therefore (or whoever that name stands for), clearly wished us to understand that Thothmēs I died towards the end of this *Vē Adar*.

Hence, from the above obscure little passage in Scripture, hitherto regarded as quite unimportant, we get, when thus interpreted and analysed, the following interesting conclusions—

1. The so-called "Pharaoh of the Oppression"—that "new king over Egypt (Khem) which knew not Joseph," who is said to have arisen (*Exod.* i, 8)—must have been Thothmēs I.
2. The so-called "Pharaoh of the Exodus" must have been Thothmēs II.
3. The date of the Exodus (whatever that was in fact—I say it was merely the departure for Khārū under Official Romic auspices, of the half-Romic Meṣrāyim, or Josephite Colonists) was A.M. 2513 = Conv. B.C. 1491. By Hebrew reckoning it occurred on the 15th day of the 7th sacred month = Nisān, or Abīb = our April = Romic Phamenoth, True Time = Pakhons, Official Time = Khoiak, Progressive Time. No such people as those afterwards called *Judah*, and still later called *Jews*, ever took part in the Exodus, or had ever been "oppressed" in Khem. Indeed, they never dwelt there at all, and did not even exist then.

The 19th Dynasty.

This I re-construct as follows—

Rāmēsēs I .. 2 yrs. .. A.M. $2712\frac{478}{480}$–$2714\frac{5}{480}$ = Conv. B.C. $1291\frac{2}{480}$–$1289\frac{475}{480}$.

Seti I .. 21 yrs. .. A.M. $2714\frac{5}{480}$–$2734\frac{145}{480}$ = Conv. B.C. $1289\frac{475}{480}$–$1269\frac{335}{480}$.

Rāmēsēs II. .. 68 yrs. .. A.M. $2734\frac{145}{480}$–$2802\frac{134}{480}$ = Conv. B.C. $1269\frac{335}{480}$–$1201\frac{346}{480}$. To this reign belongs the Stēlē of 400 years, *i.e.*, dated in the 400th year of Set-Aa-Pehti. The Hebs. that actually fell due in this

Rāmēsēs II.—*contd.*

reign were Sed Hebs for A.M. $2739\frac{6}{16}$ and A.M. $2769\frac{13}{16}$, and Hunti (Quadruple) Heb for A.M. $2800\frac{4}{16}$. The first would have been celebrated in Rāmēsēs II's 6th regnal year, A.M. $2739\frac{180}{480}$; the second in his 36th year, A.M. $2769\frac{300}{480}$; and the third in his 66th year, A.M. $2800\frac{120}{480}$. Anything else must have been some special harmonisation of the calendar, or else what are called Royal Hebs, or else Sōthic-Rising Feasts for A.M. $2740\frac{187}{480}$ – $2743\frac{208}{480}$, celebrated on 16th Epiphi, True Time, in his 7th, 8th, 9th, or 10th regnal year, and A.M. $2775\frac{432}{480}$, celebrated on 24th Epiphi, True Time, in his 42nd year.

In *Horæ Ægyptiacæ* at p. 73, R. S. Poole speaks of some inscriptions belonging to Rāmēsēs II's reign sculptured at Jebel-es-Silsileh in Upper Khem to the following effect—

Year 30, 1st
34, 2nd
37, 3rd
40, 4th
} of the Royal Hebs.

Poole calls them "Royal Panegyries." It will be noticed that they are at intervals of 3 years.

Year 30, by my chronology, would have been A.M. $2763\frac{348}{480}$; year 34 = A.M. $2767\frac{376}{480}$; year 37 = A.M. $2770\frac{397}{480}$ and year 40 = A.M. $2773\frac{418}{480}$.

These apparently were personal to Rāmēsēs II, and in that sense may be put down to "vanity," as some charge. All the other Hebs were as above stated.

Meren-Ptāh .. .. 20 yrs. .. A.M. $2802\frac{134}{480}$–$2821\frac{274}{480}$ = Conv. B.C. $1201\frac{346}{480}$–$1182\frac{206}{480}$.

In his 3rd regnal year, A.M. $2804\frac{148}{480}$ = Conv. B.C. $1199\frac{332}{480}$, he "desolated" Asr-A-Al = probably *Jezreel* near Etam, in the Hebro-Amorite country in Southern Khārū, and therefore *no* "Israel."

In his 5th regnal year, A.M. $2806\frac{162}{480}$ = Conv. B.C. $1197\frac{318}{480}$, he repelled the big Libyan attack on the western *rūd* of the Delta.

Meren-Ptāh is generally (but wrongly) regarded as the "Pharaoh of the Exodus"—an event which had happened in A.M. 2513 = Conv. B.C. 1491 = 290 years before his accession!

Seti II .. .. 13 yrs... A.M. $2821\frac{274}{480}$–$2833\frac{358}{480}$ = Conv. B.C. $1182\frac{206}{480}$–$1170\frac{122}{480}$.

Amen-mēs-ēs .. 1 yr. .. A.M. $2833\frac{358}{480}$ = Conv. B.C. $1170\frac{122}{480}$.

Tewosret .. .. 4 yrs. .. A. M. $2833\frac{358}{480}$ – $2836\frac{379}{480}$ = Conv. B.C. $1170\frac{122}{480}$–$1167\frac{101}{480}$.

Sa-Ptāh .. .. 6 yrs. .. A.M. $2836\frac{379}{480}$–$2841\frac{414}{480}$ = Conv. B.C. $1167\frac{101}{480}$–$1162\frac{66}{480}$.

Anarchy and reign of a Syrian, say } 5 yrs. .. A.M. $2841\frac{414}{480}$–$2845\frac{442}{480}$ = Conv. B.C. $1162\frac{66}{480}$–$1158\frac{38}{480}$.

Note.—This uncertain close of the 19th Dynasty—to which Set-Nekht may really have belonged—and the absence of any data regarding Sōthic-Rising Feasts in the 20th Dynasty, save for one apparently in A.M. 2922 = Conv. B.C. 1082, which would indicate Rāmēsēs XI's or Rāmēsēs XII's reign—render it impossible to arrive at more than an approximation to the period of Rāmēsēs III, in whose time the Great Sea-Raids took place. However, we can obtain a very workable idea of it—probably quite near to the exact time.

The 20th Dynasty.

(In ordinary years.)

(Set-Nekht, say .. 1 yr. .. A.M. $2845\frac{443}{480}$–2846 = Conv. B.C. $1158\frac{38}{480}$–1158).

Rāmēsēs III .. 32 yrs. .. A.M. 2846–2877 = Conv. B.C. 1158–1127. The Great Sea-Raids Period would then pan out approximately thus—

5th yr. .. A.M. 2850 = Conv. B.C. 1154. Big invasion of Western Delta by Libyans under Didi and other chiefs.

8th yr. .. A.M. 2853 = Conv. B.C. 1151. Biggest invasion of all. Led by the Pūlā-Sathū, Pūrā-Satiū, or Philistines (old Keftiū of Kilikia). Hittite Empire in Nāharīn ("Rivers-Land") broken up. Amorites expelled from Yādai ("Country of Yāh"). Land and Sea Victory by Rāmēsēs III. In those days the Airyavō-Danghavō ("People of Airyān") were settled in Airyavō-Vaēja ("Airyānian Homeland"). The Āryas (same Rhodo-Leukochroic, *i.e.*, Rosy-Blond stock) were settled in Zarah-Lake Land (Sēistān). Rāmēsēs III's Victory in the "Rivers-Land" drove bodies of the Pūrā-Satiū, Amorites of Yādai, Hittites, etc., from the "Rivers-Land" eastward. Alarm of Āryas, who migrate to the Indus Valley, not then so-called. Pūrā-Satiū, Yādai Amorites, Hittites, etc., arrive in regions forsaken by Āryas, bringing with them memories of the "Rivers-Land" in the West, *i.e.* Nāharīn. Whence Hapta-Hendū, on seeing the country they had arrived in. They then follow the Āryas into the

further East, appearing in history as the "Five Races" or *Pāñcha-Manūsya-Jātani*—Pūrūs or Pūrāvās, Yādūs or Yādavās, Tūrvasas ("Clothed like the Tūr"), Anūs, and Drūhyūs. Dahyūs (or Central Asian Tokhs, *i.e.*, Kassi) also went with them, and in Sapta Sindhavaḥ (transplanted Hapta Hendū) became known as the *Dasyūs*. These 5 Races and the Dasyūs mixed freely with the black aboriginal Niṣādas. The Āryas did not. The 5 Races and all the mixed multitude then seceded from the Āryas, moved east, founded Madyā-dēsa, and instituted Caste and Brāh-manism. The Āryas remained in the Punjāb and were regarded by the Madhyā-dēsans as *Bāhlikas* or *Vāhikas* = "Excluded." They were pure blonds (*Svityam, Sūkla*). The Caste (*Varna*) peoples were dark or otherwise coloured (*Śvāva, Kṛṣṇa, Dhūmra*). These Caste peoples eventually assumed the name Āryas, though not themselves of Āryan stock.

11th yr. .. A.M. 2856 = Conv. B.C. 1148. Another attack by the Libyans on the Western Delta. This time they had no northern allies, and the peril to Khem was not so great.

The remainder of the Dynasty I re-construct roughly thus—

		Yrs.	..	A.M.	Conv. B.C.
Rāmēsēs	IV ..	.. 6	..	2877-2882	= 1127–1122
„	V ..	.. 4 + x	..	2882–2885	= 1122–1119
„	VI ..	.. ..	..	..	..
„	VII ..	.. 15 + x	..	2885–2899	= 1119–1105
„	VIII ..	.. ..	..	..	..
„	IX ..	.. 19	..	2899–2917	= 1105–1087

Rāmēsēs	X ..	..	1 + x ..	2917–2918 = 1087–1086
,,	XI	say	5 + x ..	2918–2922 = 1086–1082
,,	XII ..	..	27 + x ..	2922–2948 = 1082–1056

Note.—Breasted gives a minimum period of 110 years for the whole Dynasty. He makes it end about Conv. B.C. 1090.

Saul's suzerain—the "Yāhveh" of 1 *Samuel*—would seem to have been Rāmēsēs IX, about whom we know practically nothing.

As already remarked, I suggest that it was either at the end of Rāmēsēs XI's reign or at the beginning of Rāmēsēs XII's reign that the Sōthic Rising referred to by R. S. Poole occurred on the 1st day of Thoth in the 1st month.

Rāmēsēs XII was ousted by Hrihor, High Priest of Amon-Rā at Thebes.

The 21st Dynasty.

(According to some extent to Breasted, but adapted to my chronology, though in ordinary, not spheroidal years.)

	Yrs.	A.M.	C. B.C.
Nesubenebded Hribor	x ..	2927–2953 =	1077–1051
Pesibkhenno I ..	17 + x ..	2953–2969 =	1051–1035
Paynozem (In Tanis) ..	15 ? ..	2969–2983 =	1035–1021
Amenemopet	49 + x ..	2983–3031 =	1021– 973
Siamon	16 + x ..	3031–3046 =	973– 958
Pesibkhenno II	12 + x ..	3046–3057 =	958– 947

Minimum :—120 years, according to Breasted.

Period :—Conv. B.C. 1077–947 = 130 years.

Note.—Paynozem is said to have reigned 40 years. But he was really a Theban (not a Tanite) prince ; and the bulk of his time should reasonably be associated with Thebes. Sheshanq I of the 22nd Dynasty married his son Ūāsarkon to the daughter of Pesibkhenno II, thus regularising Ūāsarkon's eventual position. Probably, therefore, Pesibkhenno retained his Tanite throne merely by grace of Sheshanq I.

Solomon, king of Israel, was born in A.M. 2970½. He "made affinity" with Pharaoh (1 *Kings* iii. 1). As he is supposed to have been just over 20 years old at that time, he must have wedded Pharaoh's daughter in A.M. 2990 = Conv. B.C. 1014. This seems to indicate Amenemopet as having been the Pharaoh referred to.

The 22nd Dynasty.

The re-constructions attempted for the last two Dynasties (the 20th and the 21st) are only rough approximations in ordinary years.

In this case, however, the re-construction is again on the basis of each year being regarded as a spheroidal year of $1\frac{7}{480}$ ordinary years.

Sheshanq I .. 22 yrs. A.M. $3025\frac{171}{480}$–$3046\frac{318}{480}$ = Conv. B.C. $978\frac{303}{480}$–$957\frac{162}{480}$.

Ūāsarkon I .. 36 yrs. A.M. $3046\frac{318}{480}$–$3082\frac{83}{480}$ = Conv. B.C. $957\frac{162}{480}$–$921\frac{397}{480}$.

Thakalath I .. 26 yrs. A.M. $3082\frac{83}{480}$–$3107\frac{258}{480}$ = Conv. B.C. $921\frac{397}{480}$ – $896\frac{232}{480}$.

Ūāsarkon II .. 29 yrs. A. M. $3107\frac{258}{480}$–$3135\frac{454}{480}$ = Conv. B.C. $896\frac{232}{480}$–$868\frac{26}{480}$.

(In his 29th year, he celebrated Sed Heb for A.M. $3135\frac{1}{16}$.)

Sheshanq II .. 29 yrs. A.M. $3135\frac{454}{480}$–$3164\frac{170}{480}$ = Conv. B.C. $868\frac{26}{480}$–$839\frac{310}{480}$.

Thakalath II .. 25 yrs. A.M. $3164\frac{170}{480}$–$3188\frac{338}{480}$ = Conv. B.C. $839\frac{310}{480}$–$815\frac{142}{480}$.

(In his 2nd year, A.M. $3165\frac{177}{480}$, he celebrated Hunti Heb for A.M. $3165\frac{1}{2}$.)

(In his 11th year, A.M. $3174\frac{240}{480}$, he celebrated Feast for Sōthic Rising A.M. $3174\frac{303}{480}$–$3177\frac{324}{480}$.)

Sheshanq III .. 53 yrs. A.M. $3188\frac{338}{480}$–$3241\frac{222}{480}$ = Conv. B.C. $815\frac{142}{480}$–$862\frac{258}{480}$.

Pamāy .. .. 6 yrs. A.M. $3241\frac{222}{480}$–$3246\frac{257}{480}$ = Conv. B.C. $862\frac{258}{480}$–$757\frac{223}{480}$.

Sheshanq IV .. 37 yrs. A.M. $3246\frac{257}{480}$–$3283\frac{29}{480}$ = Conv. B.C. $757\frac{223}{480}$–$720\frac{451}{480}$.

(Co-regencies, at least 23 years.)

Note.—It was to Sheshanq I that Jeroboam fled from the wrath of Solomon (1 *Kings* xi. 40 ; xii. 2). Solomon died in A.M. $3029\frac{1}{2}$ = Conv. B.C. $974\frac{1}{2}$, the 5th regnal year of Sheshanq I, and about the 47th regnal year of Amenemopet of the 21st (Delta) Dynasty.

Jeroboam's connection with Khem is good evidence to show who really was the "Yāhveh" who, at will and pleasure, granted and took away again all sovereign rights and honours in Palestine.

Tabular Statement

Of approximate synchronisations for the 22nd–25th Dynasties, including what is known as the Ethiopian (though it was really a Kāssite) Supremacy. These suggested adjustments are a mere sketch.

22nd Dyn.	23rd Dyn.	Sāite Dyn.	24th Dyn.	25th Dyn.	Judah, Israel, & Assyria.
Sheshanq IV acc. A.M. 3246	Pedūbast acc. A.M. 3238	Tefnakht acc. ?			
		ETHIOPIAN SUPREMACY.			
		(Kāshta *cir.* ? and Piankhi *cir.* A.M. 3242–3274.)			
Submits to Piānkhi. 3262 = B.C. 742	Ūāsarkon III acc. 3260		Bakenranī succ. Tefnakht. 3269		
	Sub. to Piānkhi. 3262	Sub. to Piānkhi. A.M. 3262			
	Psammus acc. 3266	Dies .. 3269	Burnt alive by Shabaka. 3274	Shabaka succ. Piānkhi. A.M. 3274	Hosea acc. A.M. 3275
	Zēt acc. .. 3276			Rec. Emb. fr. Hosea (2 *Kings* xvii. 4). .. "	Reign ends. Samaria falls. Sargon's reign begins. 3284 B.C. 720
Death & end of reign. 3283				Rāphia .. " Shabaka acc. 3285 3rd yr. .. 3287	
	Reign ends .. 3306			Taharqa acc. 3300	Reign ends 3293

Note.—The adjustments appearing in the foregoing Statement are based to some extent on a view of mine that A.M. $3287\frac{120}{480}$ = Conv. B.C. $716\frac{360}{480}$, is the last of a quartette of years, one of which was the "3rd Regnal Year of Shabataka" referred to in Breasted's *Ancient Records*, Vol. I, p. 29. § 43; Vol. IV, p. 452, § 887—which date I submit as preferable to Eduard Meyer's B.C. 700.

I arrive at it thus:—

We start, realising that we possess no data whatever regarding any Sōthic-Rising Feast, such as those which have helped us hitherto. But we are told that, at the time of the Inundation, 5 Mesorē by the Calendar, as marking that annual event, coincided with 5 Phamenoth = the 5th day of the 7th month, counting from F. 0 (the Autumnal Equinox), but called by the priests "the 5th day of the 1st month of the 3rd season."

This, I take it, means that at the Inundation, 5 Mesorē on the Epicyclical or Revolving Clock was pointing to 5 Phamenoth on the Fixed Clock, *i.e.*, F. 5 Phamenoth.

In other words, Progressive 1 Thoth (*i.e.*, 1 Thoth on the Revolving Clock) was then pointing to 1 Pharmūthi on the Fixed Clock. Therefore F. 1 Pharmūthi was Progressive Time at the Inundation. Further, it is 3 months *backwards* from F. 1 Epiphi, the point that always indicates the Annual Sōthic Risings. Therefore True or Cyclical Time = 3 months *forwards* from F. 0 (Autumnal Equinox).

That means F. 30 Athyr, which gives us:—

Point	$365\frac{120}{480}$
Add for 2 Cycles of 1461 Years each ..	2922
	$3287\frac{120}{480}$.

Which = the quartette of years—

A.M.		Conv. B.C.
$3284\frac{99}{480}$		$719\frac{381}{480}$
$3285\frac{108}{480}$		$718\frac{374}{480}$
$3286\frac{113}{480}$	=	$717\frac{367}{480}$
$3287\frac{120}{480}$		$716\frac{360}{480}$

This result can only be right if it consists with the Rising-Dates

list as I have heretofore been writing it down continuously. Let us then test it. Our last item was:—

		A.M.
1-3	Athyr	$3177\frac{324}{480}$
4-30	„	$109\frac{276}{480}$
		$3287\frac{120}{480}$

The same figure exactly! Thus we find that the method works out to a hair, although our last notice of the Cycle had reference to a time over a century previously!

Further Adjustments.

On the footing of the foregoing chronological results the following further adjustments are obtained:—

A.M.	
$3285\frac{120}{480}$	Conv. B.C. $718\frac{360}{480}$. Taharqa "Viceroy of the North" (probably meaning up in Syria as far as the Euphrates) for the newly acceded Shabataka, whose "3rd regnal year" has just been ascertained, at least within a choice-limit of 4 years.
3296	Conv. B.C. 708. Taharqa wars with Sennacherib (2 *Kings* xix. 9).
3300	Conv. B.C. 704 Taharqa overthrows his suzerain Shabataka, and accedes. He is defeated by the Assyrians at Lachish.
3317	Conv. B.C. 687. Death of Sennacherib, and accession of Esarhaddon (2 *Kings* xix. 37).
$3317\frac{11}{16}$	Taharqa celebrates Sed Heb—Conv. B.C. $686\frac{150}{480}$.
3328 (*Cir.*)	Conv. B.C. 676. Esarhaddon invades Egypt, and Taharqa flees to Napata in southern Kūsh (Kāssite country). Nile Valley overrun by Assyrians as far as the 1st Cataract, and Egypt organised into 20 Vassal Principalities.
3329	Conv. B.C. 675. Esarhaddon dies, and is succeeded by Ashur-bani-pāl. Taharqa rebels.
3330	Ashur-bani-pāl defeats Taharqa.
3332	Taharqa re-takes Thebes, but retreats to Napata on advance of combined Assyrian and Native Egyptian army under Nekau I.

A.M.	
3333 (*Cir.*)	Conv. B.C. 671. Taharqa dies, and is succeeded by Rūt-(sometimes called Tanūt-) Ammon who captures Memphis and puts Nekau I to death.
3338 (*Cir.*)	Conv. B.C. 666. Ashur-bani-pāl defeats Tanūt-Ammon, and destroys Thebes. Egypt administered by Assyria for 10 Years.
3376½	Conv. B.C. 627½. Kyaxārēs defeated by the Sākhi. Nineveh captured, looted, and burnt by the Sākhi, or Sākh-Gelōths, of Sākhland (*Māt-Sākh* = Mesech, or *Māt-Gāgi* = Magog), *temp.* Ashur-etil-ilani. Gāgi (Gog) not to be confounded with Gūgū (Gyges) of Lydia. Sākhi masters of Western Asia for 28 years.
3395	Conv. B.C. 609. Josiah, king of Judah, defeated and slain at Megiddo by Nekau II (2 *Chron.* xxxv. 20).
3398	Conv. B.C. 606. Nineveh (much enfeebled) captured by Nabū-Pāl-Ūzūr of Babylon and Kāi Ūvakshatara (Kyaxārēs) of Media, *temp.* Sin-sārra-ūzūr. Generally (both in literature and popularly) confused with the preceding much more important event in Conv. B.C. 627½. Accession of Nabū-Kūdūri-Ūzūr (Nebuchadrezzar) as king of Babylon. He completely overthrows Nekau II at Karkhemish in Nāharīna.
3406½	Conv. B.C. 597½. Capture of Jerusalem by Nebuchadrezzar, and Deportation of Jeboiachin, the Queen, and the principal Officials, together with the Temple and Palace Treasures, the flower of the army and the *élite* of the inhabitants to Babylon.
3416¾	Conv. B.C. 587¼. Jerusalem again occupied. Deportation of Zedekiah and the rest of his subjects, except the poorest classes, to Babylon. End of the Kingdom of Judah (2 *Kings* xxiv, xxv; 2 *Chron.* xxxvi). A year or two later Jerusalem was sacked and partially destroyed.
3434	Conv. B.C. 570. Defeat of Ūā-Ab-Rā's (Hophra's or Apries's) General, Aahmēs or Amasis, by Nebuchadrezzar in the latter's 37th regnal year.

A.M.

3434 Complete and final Overthrow of Egypt, and wholesale Deportation of the Romiū, Neo-Meṣrāyim, and Egyptians to Babylonia. By Neo-Meṣrāyim I mean those mixed Romiū, Libyans, etc., who were left in the Delta, especially the western *rūd*, after the departure of the original "People of Meṣ-Rā," or "People of the Zodiacal Bull," *i.e.*, the Abiri, Josephites, or Children of I-Sarah-El, in Conv. B.C. 1491. By Egyptians I mean the people more especially identified with the eastern *rūd* of the Delta, who for the most part consisted of those Ephraimites and Manassites who had fled from Northern Palestine and taken refuge in the Delta during the time of the great Assyrian Scare throughout, say, the 8th century B.C. and of whom we read thus—

> "In that day shall five cities in the land of Egypt speak the language of Canaan and swear to the Lord (Yāhveh) of Hosts; one shall be called, The city of Hērēs" (*Isa.* xix. 18),

said to mean "Destruction." It was really On, or Ān, "the Sun," in the ancient sense of *Āb-Alāh-On*, "Mighty Father On." Also the same as Aven = probably *Āb-On*. Since the establishment of the Pūlāsathū on the coast of Canaan, the entire country had acquired the name of Philistine-Land, for that is the meaning of Palestine. But the Philistines were also known in the Delta as the Ai-Keftiū, or "Remnant of the Keftiū"; and Palestine was generally and vaguely referred to as Ai-Keft, "Country of the Remnant of Keft." As the Ephraimite and Manassite refugees above-mentioned hailed from there, they also in the Delta were loosely called *Ai-Keftians*—whence Egyptians and Egypt, afterwards attached to the Delta itself and its inhabitants.

3438 Ūā-Ab-Rā put to death. Amasis, the General, installed as Pharaoh Aahmēs II.

A.M.

3438 to 3479 Conv. B.C. 566–525. Prosperous reign of Aahmēs II.

3452 Conv. B.C. 552. Invasion of Media by Kyaxus, *temp.* Ishtūvīgū or Astyagēs.

According to Mr. J. B. Dimbleby (for whom this year was B.C. 544, on the basis of *Zero* being regarded as B.C. 3996), a Sōthic Rising was observed—in the lifetime, he says, of Hēsiod. By my present calculations the date 6 Mekhir, True Time, for that Cycle, indicated the following quartette of years :—

A.M.		Conv. B.C.
$3450\frac{339}{480}$		$553\frac{141}{480}$
$3451\frac{346}{480}$		$552\frac{134}{480}$
$3452\frac{353}{480}$	=	$551\frac{127}{480}$
$3453\frac{360}{480}$		$550\frac{120}{480}$

Apparently, therefore, there is something in Mr. Dimbleby's statement. Official Time for the Rising would have been 6 Pharmūthi. Corresponding Progressive Time would have been 25 Tybi.

3455 Conv. B.C. 549. Overthrow of Astyagēs by Kyrus, who effects the Peaceable Acquisition of Media.

3466 Conv. B.C. 538. Capture of Babylon by Kyrus, *temp.* Nabū-nahīd and Belshazzar.

3459 to 3475 Conv. B.C. 545–529. Re-appearance in freedom of the deported Romiū, Neo-Meṣrāyim, and Egyptians in the wilderness regions of Airyo-Tūrān, as the Wanderers of Mas—afterwards by the Greeks and others rendered Mas-Sagetai, or Mas-Sagetae (an etymological evolution from Sāgh or Sākh, and akin to Sküthai—*Sāk-āthai* = "Descendants of Sākh"). Mas-Sagetai has commonly been written *Massagetai*, and, by European and especially English scholarship, is nearly always wrongly regarded as consisting of the parts *Massa* and *Getai*.

3479 Conv. B.C. 525. Accession of Psamtek III in Egypt. He reigned 6 months. Conquest of Egypt by Kambūjīyeh (Kambyēs) of Persia.

A.M.

3497 Conv. B.C. 507. This year, according to R. S. Poole, there was a Coincidence between the Egyptian Tropical Year and their old Vague Year, similar to one that had happened 1500 years before in Conv. B.C. 2005.

(*Note.*—All the foregoing re-constructions are merely preliminary and tentative.)

CONCLUDING REMARKS.

The recorded Official observations by the old Romic Priesthood of the Hēliacal Risings of Sōthis (Cyclical and Annual), and their celebrations of Feasts in connection therewith and of the periodically recurring Sed and Hunti Hebs, indicate that the age-long civilisation of Tomeri or Khem (nearly always mis-called *Egypt*), had been flourishing under a particularly enlightened, strong and settled government, whatever dynastic form or forms it took from time to time.

It is therefore worthy of note that the last Sōthic-Rising Feast for which we possess data is that which occurred in the reign of Thakalath II of the 22nd Dynasty in A.M. $3174\frac{303}{480}$ = Conv. B.C. $829\frac{177}{480}$—or at any rate in a quartette of years containing that date. But, between that and its next predecessor—a Rising in A.M. 2922, probably late in the reign of Rāmēsēs XI, or else early in that of Rāmēsēs XII—there is a blank of over 252 years! And between that again and its next predecessor—one in Meren-Ptāh's reign, A.M. $2803\frac{141}{480}$—there is another gap of some 118 years!

As for the Hebs, the last traceable is that which fell in the reign of Taharqa of the 25th Dynasty, in A.M. $3317\frac{1}{16}$ = Conv. B.C. $686\frac{5}{16}$. But they practically ceased $182\frac{0}{16}$ years before then, with the Sed celebrated by Ūāsarkon II of the 22nd Dynasty in A.M. $3135\frac{1}{16}$ = Conv. B.C. $868\frac{15}{16}$.

The Twenty-Second Dynasty, therefore, seems clearly to mark some dread Epoch which ushered in for theretofore peaceful and orderly old Khem, a period of *violent changes and widespread disaster and confusion.*

What could that Epoch have been?

Obviously the epoch which witnessed the establishment of the so-called Ethiopian Supremacy (of Kāssite origin, be it noted)—followed by the terrible Assyrian and Babylonian Invasions and wholesale Deportations—with regard to which, however, it seems fashionable in some learned circles to allege that the grand dramatic *finale* never occurred at all! When is that old, old *ex silentio* argument going to get its *quietus?*

There can be no doubt that, though hitherto conventionally regarded as ethnically "Semitic" (in King and others' wholly wrong sense of Amoritic), these Assyrians (also in some vague way associated with an Arabian origin) were really of mixed Rhodo-Tūrānian and Melanochroic descent, with, however, a strong dash of barbarous Kāssite blood in their veins.

The so-called Ethiopians were certainly the descendants—more or less mixed—of the old African stream of Kāssite dispersion.

As for Nebuchadrezzar and his Chaldaean (*Kaldā, Kardā, Kasdā*) Babylonians, they were practically pure Kāssites, though doubtless to some extent blended with Melanochroian stock.

In any case it was Barbarism—highly *kultured* Barbarism of the genuine, changeless, incorrigible Kāssite brand—before which cultured old Khem or Tomeri went down in the 8th to the 6th centuries B.C.

Let our gaze range where it lists in the realm of history, ancient or modern—everywhere (whether in Asia, in Africa, or in Europe), and in every age—it will come across the Mark of the Kāssite Beast, *semper eadem*!

H. Bruce Hannah.

P.S.—Of the various Lists above referred to, which it is necessary to have for the practical application of my discovery to our existing and any future data of knowledge, I have as yet published none. I may publish them later on.

H. B. H.

VICE-CHANCELLOR'S ROOM